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PSYCHOLOGY AND SCIENTIFIC METHODS

THE GOODNESS AND BEAUTY OF TRUTH. I

I

IT is of curious interest that, regarded in its whole course, philosophy has been optimistic. It has pronounced truth good. There have been, there still are, pessimists: Proclus and Schopenhauer and all Asia. But the world is yet a livable world, and the philosophic phrasing of this livableness is that its truth is a good truth. The race has lived and thriven, it has achieved a certain mastery over nature, harnessing her powers to the fulfillment of men's needs; nay, in the very opulence of its rulership contriving new needs for her ministration. That philosophy were less than human which should fail to nod its Jovian approval of such efficient living!

And yet it is of curious interest . . . not that philosophy should have made appetite the measure of truth, for without this she could not have been philosophy; nor yet that she should have pronounced the world livable and life good, for otherwise she would have countered biological fact . . . but it is of curious interest that the credo in a life *dominantly* good should have expanded into a credo in a life *absolutely* good, that the recognition that the controlling truths of nature are, humanly speaking, beneficent, should have crystallized in the dogma of the identity of the true and the good.

Of course the main stress, the "drive," of experience is all in this direction: the truths that interest and hold us are the ductile, the malleable truths of our world; life is action, and the thought-reaction of efficient living naturally brings into emphasis complaisant truths. Nevertheless, it would seem that the consciousness, inevitable to every human being, of the stubbornness and inductility of the moiety of experience ought to preclude any generalization of *all* particular truths into one truth, homogeneously beneficent. There are unconquerable and even "brutal" facts in every life, for whose truth it is normal to expect recognition; and yet, I sometimes think,

the chief "job" of philosophy has been to "get around" these facts.

Now I do not believe that this task could ever have been performed, even plausibly, but for a subtle duplicity in the measures we have set for truth. This duplicity derives, I imagine, from Plato. In the *Philebos*, Plato makes truth and goodness alike into ends of action, for he speaks of "the power or faculty . . . which the soul has of loving truth, and of *doing all things for the sake of it*," and he also says, "that for the sake of which something else is done must be placed in the class of the good, and that which is done for something else, in some other class."¹ That which is *sought for its own sake* is good, and the soul loves truth for truth's sake. The good, then, is, at least in part, the true, but that truth does not exhaust the meaning of goodness is the whole intent of this dialogue. The conclusion is thus presented:

"And now the power of the Good has retired into the region of the Beautiful; for Measure and Symmetry are Beauty and Virtue the world over.

"True.

"Also we said that Truth was to form an element in the mixture.

"Certainly.

"Then, if we are not able to hunt the Good with one idea only, with three we may catch our prey; Beauty, Symmetry, Truth are the three, and these taken together we may regard as the single cause of the mixture, and the mixture as being good by reason of the infusion of them."

The power of the good has retired into the region of the beautiful, and truth forms an element in the mixture. Plato does not assert the identity of the true, the good, and the beautiful; though he does say that the good must be true as well as beautiful. Yet in analyzing goodness into beauty and virtue and truth, and in finding measure and symmetry—or, as we would say, law and order—to be the essence of beauty and virtue, he makes more than easy the step which philosophy was not loath to take, summarized in the great trinitarian doctrine of the essential unity of truth, goodness, and beauty.

This step, as I say, is only implicit in Plato's utterances, though as I conceive his philosophy, he might have proceeded to the explicit dogma with right of far more logical grace than is manifest in most of his successors who have so proceeded. For the very heart of Plato's thinking is the identification of truth and ideality. He does not, as do later thinkers, attempt to justify the imperfect world of terrene experience, rather, he condemns it, with a sensitive and poetic sympathy for the life that all men share, yet none the less with the conscientious austerity of his idealism, he condemns it, severing it hopelessly from the empyreal domain of truth. Plato does not deny the existence of ugliness and pain and evil and falsity; he does not justify these experiences; but he asserts that there is a world, an

¹ Citations from Plato are of Jowett's translation.

ideal world, which is forever free of them, and in so asserting he is immortally true to the idealizing instincts of his kind.

II

But how has fared the dogma in the thought of Plato's philosophic posterity? The duality of Plato's cosmos—spite of the fact that to it all human living gloryingly testifies—has seemed to his successors, from Aristotle onward, a defect to be overcome. Even Christian philosophy, which ought to have welcomed Platonic dualism as its potent ally, has persistently yielded to the mania for monism. Already with Augustine God is "absolute, immutable, omnipresent Goodness and Truth and Beauty"; and already we are committed to the Scholastic formularies: *ens est unum*, Being is One; and this One, in relation of conformity with knowing, is *ens verum*, in relation to appetite *ens bonum*, in relation to contemplation of restful proportion *ens pulchrum*.

The breaking away from Scholasticism brought no emancipation from this trinitarianism. Shaftesbury reasons: "What is beautiful is harmonious and proportionable; what is harmonious and proportionable is true; and what is at once both beautiful and true is, of consequence, agreeable and good." This (obviously reminiscent of the *Philebos*) is made ground for identifying goodness and truth and beauty in their mutual predicability with respect to a single creation. Of course the Leibnitzian contention that this is the best possible, or most perfect, of worlds is but another iteration of the same hypothesis. Perfection, with Leibnitz, is either moral or physical-metaphysical, and in each sense it may be predicated, in the greatest possible degree, of the one world which actually is.

Finally we come to the modern philosophy of the absolute, the last desperate expedient to save the face of the world! The absolute is, in the first place, absolute reality. But the real is ideal, and in ideality is the essence of all truth. Hence the absolute is the absolute truth. Further, being absolute, it is perfect; perfection is absoluteness. And the meaning of perfection can only be finality in goodness and beauty. So in the absolute, which is the essence of the world, is the summative realization of truth and goodness and beauty.

Such, briefly, is the development of this curious philosophical assumption that the whole truth of life must somehow be justified to the living as at once beautiful and good. That the assumption proceeds from emotion rather than logic and that the conclusions which it prompts are clamorously belied by experience, I do most potently believe. The world in which most lives pass is hopelessly Manichæan,

compact of struggling good and ill. The evil that men do is black and stinking, and it lives after them. And if the good, oft interred, as oft rises, it is only to renew its war with ills no more phantom than itself. Bitter-sweet is experience, and the bitter is as mordant as the sweet is suave.

But if experience be thus doubly edged with the twin blade of pain and bliss, if the hurt of life and the sin of it be stinging sharp in its substance, what sense shall be made of this denial of truth to the darker half of being? How can philosophy overpersuade experience, so that consciousness of evil shall be brought to belie itself?

This is the moral problem of the universe which, through obdurate centuries, the willful optimism of the human mind has tackled and tackled again, tirelessly, tenaciously.

Obviously the problem is hopeless from the human point of regard (save, indeed, at the cost of human reason, as witness Christian Science!). Obviously a shift of vantage must precede even attempted solution. And this shift was early made. In order to sustain the goodness of all truth, truth and goodness alike were made predicable (in their *totality*, taken to be the same as their *reality*) not of human experience as human beings know and name it, but of the absolute experience of the creative mind. The Scriptures offered a happy starting-point for this shift—*Genesis* i. 31:

And God saw everything that he had made, and, behold, it was very good. And the evening and the morning were the sixth day.

Creation was completed, *and it was good*. Henceforth theology owned but one task: "to justify the ways of God to men."

The shift was from the point of view of man's insight to the point of view of God's insight, from the reasoning of creature to the reasoning of creator, from humanism to cosmism. Truly the device is poignantly simple! Human wretchedness and misery and grief, human cruelty and sin and shame, human agonies under the butchery of nature—all the seeming diabolism of the world—were to be dissipated by a change of perspective; under the enchantments of cosmic distances all the harsh and rasping lines of the pattern of life were to melt into easeful and gracious curves and the piercing notes of mortal suffering to modulate into celestial harmonies.

If there were not something so desperately pathetic in it all—this wild effort of the afflicted atomy to "save the phenomenon" of creation—if reason were not so blindingly in tears, nausea could be our sole reaction to such thought. But the pathos and the tears are there, through all the obdurate centuries—

Sunt lacrymæ rerum et mentem mortalia tangunt.

But let us come to the force of the persuasion. Reasonings set

forth in their nakedness are impotent to hold the minds of men; they must be clothed in the bright and varied raiment of passion and imagination—this, or go beggarly to starveling ends. And so in this case: God is all-wise and creation, as he sees it, all-good; the imperfection of a relative and mortal being is cured in the perfection of absolute being. In doctrines such as these there is no solace for the hurt life save by some merciful descent of their incarnate grace into its hell.

And how has it been brought down, this grace?

The history of Christian philosophy is the story. For two thousand years doctors and saints have pleaded the sinfulness of their kith and kind and the irresponsibility of the Most High. For two thousand years Christendom has reechoed the self-accusations of distraught and distempered souls and given its hourly tithe of mutilated lives in dreadful expiation. For two thousand years humanity, blind-led through shame and suffering, has cried its *culpa mea* into impitiable ears. For two thousand years man has apologized for God.

Yet in these two millennia a great change has come over the conception of God and over the human regard of the problem of evil. The major premise—the goodness of truth—has not been brought into question, nor has the method of justifying this premise by a shift from the human to the cosmic perspective been relinquished, but the dress of the argument, that which gives to it the color of persuasion, has undergone an entire transformation. The nature of God himself has been philosophically reconstructed, and for the sole (though unconscious) purpose, I believe, of maintaining his morality. This transformation I would briefly sketch.

III

The primary conception of God's nature—that with which Catholic orthodoxy starts, and which the more conservative churches and the orthodox laities still maintain—is what I should term the Hebraic conception. This is the conception of a God glorified by his creation and praised by his creatures:

The heavens declare the glory of God; and the firmament sheweth his handiwork.

Or again—

All thy works shall praise thee, O Lord; and thy saints shall bless thee. They shall speak of the glory of thy kingdom, and talk of thy power;

To make known to the sons of men his mighty acts, and the glorious majesty of his kingdom.

God, in this view, is concerned for the veneration of his creatures; he is jealous of their attention, and glories in their praise; even the

divine mercy is manifested not as the compassionate rescue of the afflicted creature, but as a display of the benignity of the creator.

Such already is the God of Augustine, and hence of historic orthodoxy. From that condemnation, says the great father, which came upon mankind as a result of the sin of the parents, "none can ever be freed, but by the free and gracious mercy of God, which makes a separation of mankind, to shew in one of the remainders the power of grace, and in the other the revenge of justice. Both which could not be expressed upon all mankind, for if all had tasted of the punishments of justice, the grace and mercy of the Redeemer had had no place in any; and again, if all had been redeemed from death, there had been no object left for the manifestation of God's justice; but now there is more left than taken to mercy, that so it might appear what was due unto all, without any impeachment of God's justice, who notwithstanding having delivered so many, has herein bound us forever to praise his gracious commiseration."

It is the business of creation to extol its Lord and Maker, even election and damnation are of a piece with the argument. "The Church," saith St. Bernard, "is wonderfully concealed in the bosom of a blessed predestination and in the mass of a miserable damnation." Calvin puts the matter in words which only the sternness of his unlovely personality can preserve from mawkishness:

It is unreasonable that man should scrutinize with impunity those things which the Lord has determined to be hidden in himself; and investigate, even from eternity, that sublimity of wisdom which God would have us to adore and not comprehend, to promote our admiration of his glory.

This, as preface to the credo:

We assert, that by an eternal and immutable counsel, God has once for all determined, both whom he would admit to salvation, and whom he would condemn to destruction. We affirm that this counsel, as far as concerns the elect, is founded on his gratuitous mercy, totally irrespective of human merit; but that to those whom he devotes to condemnation, the gate of life is closed by a just and irreprehensible, but incomprehensible judgment.

There remained but for Jeremy Taylor to clinch the ghastly argument by setting it in ghastly verse:

O mighty God,
 Let not thy bruising rod
 Crush our loins with an eternal pressure;
 O let thy mercy be the measure,
 For if thou keepest wrath in store
 We all shall die
 And none be left to glorify
 Thy name, and tell
 How thou hast saved our souls from hell.

The modern mind shudders as it calls the roll of these grim *defensores fidei*. They have made their God monstrous with reason, and with the name of holiness they have apotheosized inhumanity. Their words seem to be seasoned in cruelty, and their ready consignment of the major portion of their fellow men to eternal damnation "for the better glory of God" sounds like terrible blasphemy. Nevertheless, there is a certain raw-boned strength in all this thinking that has not even yet lost its imaginative appeal, there is human passion at the core of it, and human pain. We may feel a certain mingling of amusement with sympathy at the subtle way in which Aquinas eludes the difficulties of the question whether God may not exact of one the relinquishment of beatitude *ad decorem universi*, but the amusement is all gone, and only the sympathy left, when we read the words of Catherine of Siena:

Better were it for me that all should be saved, and I alone (saving every charity) should sustain the pains of hell, than that I should be in paradise and all they perish damned; for greater honor and glory of thy name would it be.

For it was this Catherine who exposed herself to a flow of boiling water the while she meditated upon the pains of hell and besought her creator to accept what she thus voluntarily endured in expiation of them. Nor can we follow the great disciple of Aquinas through his remorseless *Inferno* without awe of the endurance with which the passion for justice can fortify the human soul.

The truth is—once we get our breath—this whole development is not humanly unintelligible. It is a harsh spectacle, but it is the outcome of harsh living. We realize this, I think, when we regard the likenesses of these by-gone thinkers: their gaunt cheeks and corded necks, their sunken eyes and the great features that stand out on the medallions. They were men who lived the lives of thinkers in the lurid intervals of war, and it is not strange that blood should have seemed to them a trifling piaculum to righteousness or that in their zest for moral goodness they should have shorn the world of loveliness.

Further, there is a solidity and consistency in their thought which the ensuing age does not present. Up to the very threshold of the eighteenth century, Christian philosophy is consistently pessimistic so far as this world is concerned. Human life received a wrong start from the first parents and it has never been righted. The best we can make out of a bad predicament is a tolerable preparation for the life to come, and even this can be attained only by grievous denial of what seems good and attractive to us here. All things mundane are polluted, and all the seeming sweetness of nature is unclean.

This, I say, is the consistent view of a world which has fallen from grace, and it makes easier our understanding of the brutal acceptance of the divine condemnation, giving, too, a kind of picturesque sturdiness to the thought of men who could live up to such a view. We realize, of course, that they saved their cosmos to optimism by the introduction of a world of bliss beyond—by the *beata vita* for which this life is preparatory, but at least there was nothing cowardly in their way of facing the hard preparation.

As much can not be said for the eighteenth century. From Leibnitz onward its whole smooth, self-satisfied course betrays a substantial participation in the good things of this life. This world is the best possible of worlds, so good, in fact, that once its procedure was inaugurated, the Almighty became superfluous: harmony, preestablished from the day of creation, pervades all its elements. In the beginning God completed his work and saw that it was good, and the repose of the seventh day has never since been broken. This implication of the non-interference of the creator in his handiwork led inevitably to the deism of the century: a creator, it was conceded, was necessary to the first operation of the world-engine, but the operation begun, nature was the sufficient explanation of its continuation, God was thenceforth otiose.

Thus with an altered view of life we get an altered conception of God's nature. The life of this world is looked upon with an optimism so smug and complacent that man is jealous even of the suggestion of divine interference in its orderly course. Nothing is at fault; nothing here ought to be changed; it is for the creator to keep hands off lest he mar his achievement. God can add nothing to the world, and if the world can be said to glorify God it is in the sense in which a prodigiously endowed child confers credit upon his puzzled parents. Of course God is already at a vast remove from humanity; the world, with all its furniture, is but his toy, his bauble, a six days' plaything, and already we have in prediction the completer separation which the next century is to bring.

I can not better illustrate the transformation in men's thought that takes place in the seventeenth and eighteenth centuries than by quoting briefly from an English poet of each of these centuries. The seventeenth century opens with Medievalism—if so we may term the elder view—still dominant. All the learning of the Renaissance, all the emancipation of the Reformation, has not sufficed to dissipate in Christian philosophy its gloomy appraisal of the worldly life nor to alter its conception of God as a being to be magnified by mortal tribulation. Indeed, we seem to meet an accentuation of these traits in the Puritanic reaction against the humanism of a paganizing lay

scholarship. I quote, however, not from a Puritan, but a convert from Catholicism to the Church of England—from Dr. Donne's "Anatomy of the World," wherein "the frailty and the decay of this whole world is represented":

Well died the world, that we might live to see
This world of wit, in his anatomy;
No evil wants his good; so wilder heirs
Bedew their fathers' tombs with forced tears,
Whose state requites their loss: whiles thus we gain,
Well may we walk in blacks, but not complain.

So the poem opens, setting its hypothesis. The meaning of human endeavor is thus set forth:

Let no man say, the world itself being dead,
'Tis labor lost to have discoverèd
The world's infirmities, since there is none
Alive to study this dissection;
For there's a kind of world remaining still,
Though she which did inanimate and fill
The world, be gone, yet in this last long night,
Her ghost doth walk, that is, a glimmering light,
A faint weak love of virtue and of good,
Reflect from her, on them which understood
Her worth; and though she have shut in all day,
The twilight of her memory doth stay;
Which, from the carcass of the old world free,
Creates a new world, and new creatures be
Produced; the matter and the stuff of this,
Her virtue, and the form our practice is. . . .

So man ghostly walks, mid the slow decay of his earthly paradise—

This man, whom God did woo, and loth to attend
Till man came up, did down to man descend,
This man so great, that all that is, is his,
O what a trifle, and poor thing he is! . . .
Be more than man, or thou'rt less than an ant.
. . . so is the whole world's frame
Quite out of joint, almost created lame:
For, before God had made up all the rest,
Corruption entered, and deprav'd the best. . . .

Donne's stiffly articulated verse seems somehow particularly appropriate to the theology it conveys. It moves with the rattly swing of the Danse Macabre, and it gives us a sense of the discords and jars of creation which the same theology entirely misses in the symphonic epic of his great contemporary. With all his Puritanism Milton possessed the humanist's love of beauty, so transforming even diabolism into grandeur; his imagination was infinitely nobler than his thought, and his poetry is hence a poorer medium for this thought than is that

of the more narrowly theological divine. Yet Donne himself has imagination, only it does not move in the domain of beauty: lurid, powerful, it lights deep vistas with its sudden glows; flares and expires, like the very reflection of the pent and smouldering genius of the Medieval mind. It is unlovely, but it is not without fascination, and it commands respect.

Respect is an attitude which it is extremely difficult to maintain in our regard of the work of that eighteenth-century poet who travestied Dr. Donne. Pope's shallow and complacent verse is perfectly adapted to the shallow and complacent philosophy of a shallow and complacent century. It belongs to a period when men made conspicuous display of their clothes and their table manners; and it is irksome for us of an inherital period (perhaps because we feel so keenly the vexatiousness of the inheritance) to struggle into sympathy with it. None the less, in the dialectic of history the eighteenth century occupies a solid moment, which we must understand if we are to advance to comprehension of our own ways of thinking. And of all its spokesmen Pope is by odds the most loquaciously adept. With other men, while their philosophies are not profound, they have not lost the beauty of an older humanism or the earnestness of the older asceticism; but with Pope thought is only a special kind of elegance and truth is only timeliness.

The very key-note of Pope's "Essay on Man" is the key-note of the mental lightness of his age. Milton had inaugurated his great poem, in the preceding century, with the prayer:

What in me is dark
Illumine, what is low raise and support;
That to the height of this great Argument
I may assert Eternal Providence,
And justify the ways of God to men.

Pope gives us his measure in

Laugh where we must, be candid where we can;
But vindicate the ways of God to Man.

And the fall from reverence to conformity, from "justification" to "vindication," is but the moral token of the intellectual descent which is typified.

I need not quote Pope's familiar epistles at any length. A few summarizing verses will suffice to reestablish their general context and import:

All Nature is but Art, unknown to thee;
All Chance, Direction, which thou canst not see;
All Discord, Harmony not understood;
All partial Evil, universal Good:
And, spite of Pride, in erring Reason's spite,
One truth is clear, *Whatever is, is right.*

We have to read this twice and thrice, and read it yet again, before we begin to realize that here, in mean and dingy littleness, is preserved the mere logic of Augustine's fine utterances:

For God would never have foreknown vice in any work of his, angel or man, but that he knew in like manner what good use to put it unto, so making the world's course, like a fair poem, more gracious by antithetic figures. . . .

For as a picture shows well though it have black colors in divers places, so the universe is most fair, for all these stains of sins, which notwithstanding, being weighed by themselves, do disgrace the luster of it. . . .

What is the secret of the changed effect? It is a change in the color of life. In Augustine the thought springs from the fresh ardors of a beauty-loving soul. Even when it recurs in Calvin, for all its bony intellectuality, it is saved from mawkishness by the moral sternness of the thinker. But in the age of Pope we are well aware that neither the beauty of the cosmos nor its moral order was felt to be necessary to its human comprehension or to enhance men's satisfaction with life as they found it. Christian philosophy was a mental pose, an act of conformity, and its glib recitation serves only to expound its spiritual hollowness. Orthodoxy had been lived through; beauty and goodness in turn it had lost; and at last its well-hinged logic showed forth with all the neat articulation, and all the unloveliness, of a blanched and mounted skeleton.

IV

It is small wonder that the succeeding century, in the full swing of a buoyant optimism, should have felt the need of a revived philosophy and a reinvigorated faith. It is hardly wonderful that it should have sought the new light with as little shift as possible from the orthodoxy of the centuries past, and it is interesting to see in just what directions the shift which it does make carries it.

The nineteenth-century addition to Christian philosophy is in three respects striking. First, it is at one with historic orthodoxy in justifying creation from God's point of view rather than from man's; it is cosmist rather than humanist. Second, it differs from the earlier orthodoxy and agrees with the eighteenth century in its optimistic appraisal of this life. Third, its conception of God's nature is revolutionary.

I have said that the early Christian conception of the divine nature was Hebraic. God was regarded as the father, but his fatherhood was rather that of the patriarchal head of the clan than of the sire of an only son. He was a father who was also a ruler, and in his character of ruler he was King of Glory, and jealous of his glorification. He was the Lord of Praise,

Placable if his mind and ways were guessed,—

though only revelation could insure the guessing. The conception is of a God intensely interested in the world he has created, and having such concern for it that to mistake his meaning must cost his creatures dear.

We have seen how by the eighteenth century this intense and personal interest has waned. The deistic creator who sets the clock-work of the universe going derives only an indifferent edification from his contemplation of its smooth running. Occasionally he may interfere, working a miracle less for the benefit of creation than for the assuagement of his own ennui, but on the whole he is content to let the goodness of his work manifest itself in its mechanism. This is the eighteenth-century view (exaggerated, no doubt, but only to its fulfilled logic), and in a sense it affords a transition to the introduction of the absolutely fainéant deity of the nineteenth century; but the change is really revolutionary.

In the poem from which I have just cited, Browning concedes to the universe another and diviner being than the "placable" Setebos:

There may be something quiet o'er his head,
Out of his reach, that feels nor joy nor grief,
Since both derive from weakness in some way.

Ever sure in his theologizing instinct, Browning is quite right here in setting the fainéant deity at an absolute remove from the creative: the one can not properly be derived from the other. It is a new and revolutionary conception of God which the transcendentalists of the nineteenth century introduce into Christian philosophy.

The very word *transcendental* characterizes the revolution. God is set at an infinite remove from his creation. He is exalted to a perfection so absolute that it can not in the remotest way reflect our sullied life, and so lonely that it can not break its solitudes with the faintest compassion for mortal pain. Things mortal are not presented to the absolute as things mortal: they appear to it only as the subtile and vanishing complexions of an experience in which time and passion are eternally transmuted into timelessness and passionlessness. It knows mortality only *sub specie æternitatis*—as once for all robbed of its mortal poignancy. Knowing the compensations of Eternal Being, it is content to take its eternal repose in the actionless activity of this knowledge.

This Quiet, all it hath a mind to, doth,
Esteemeth stars the outposts of its couch,
But never spends much thought nor care that way.

This is the God with which German metaphysics has replaced the personal and concerned creator of Hebraic faith. But it is obvious that in its mere transcendency such a God is impossible as the

object of Christian belief; and, in fact, I am presenting but half the picture in emphasizing the transcendency. For not only is the God of transcendental philosophy an utterly transcendent being, but—strange contradiction!—he possesses the precisely opposite quality in as utter a degree. The absolute experience is not only hopelessly remote from human experience, but it is also unwaveringly *immanent* in human experience. *Totum in toto et in parte totum*: immanence, the sensible contrary of transcendence, is made the co-attribute of God.

I can not enter into the shrewd, and logistically unanswerable, logic which makes this contradiction appeal to men's minds as "the better reason"; but I do wish to show (since, after all, our logic is but our shamed apology for faith) something of the force of its spiritual appeal. And this appeal, I believe, is due in large part to the admiration for quiet excited by an unquiet age, and again to the friendliness and sympathy with which a divine immanence is felt to endow a nature which men have come so wistfully to love. Peace and sympathy—their antithesis to our perturbed modernity has made these seem divine. In place of a Heavenly King, ruling the universe with a sure and steady hand, we have enthroned a Prince of an unvexed and untempted Peace; in place of a watchful and omnipresent Providence, argus-eyed for the fall of a sparrow or the numbering of our hairs, we have trusted for consolation in the immanence of an Abiding Presence.

"Despite the vastness, the variety, the thrilling complexity of the life of the finite world," says Josiah Royce, "the ultimate unity is not far from any one of us. All variety of idea and object is subject, as we have seen, to the unity of the purpose wherein we alone live. Even at this moment, yes, even if we transiently forget the fact, we mean the Absolute. We win the presence of God when we most flee. We have no other dwelling-place but the single unity of the divine consciousness. In the light of the eternal we are manifest, and even this very passing instant pulsates with a life that all the worlds are needed to express. In vain would we wander in darkness; we are eternally at home in God."

Immanent in human experience yet forever transcending experience, as near to life as a mirrored reflection yet as absolutely cut off from it as is mirrored space from real space . . . this nineteenth-century conception of the divine nature is no new one in history. It is as ancient as Brahm in the thought of India. It is the breath of life to the Neo-Platonists: "Transcending all bodies is soul, transcending souls is intellect, transcending intellectual being is the One"; so Proclus ascends to the selfless essence of God, the One before all who is also the One in all, and is the realization and per-

fection of the Circle of Being. Even in the new world the metaphysically minded Aztecs adumbrate the conception: above their demonic pantheon, Tezcatlipoca personates the transcendent yet immanent creator:

O puissant Lord, under whose wings we seek protection and shelter, thou art invisible and impalpable as air and night! . . .

O our very good Lord, who castest thy shadow about all who approach thee, even as a tree tall and great, thou art invisible and impalpable and thy glance penetrateth the rocks and to the heart of trees, beholding all that is there concealed. It is for this that thou seest and understandest that which is in our hearts and in our thoughts. Before thee our souls are as a film of smoke or of fog vanishing from the earth!

The conception, explicit or implicit, occurs thus in many non-Christian contexts, but with this significant difference: that in these diverse thought media it is almost invariably an accompaniment of pessimism. This is obvious enough in India: life is one perpetual degeneration from the pure being of Brahm, and the acme of bliss is the soul's utter submergence in the impersonal indifference of the One. It is no less obvious with the Platonists. Plato himself, with an almost shifty adroitness, after stating, in the *Timæus*, that God, in his goodness, patterned the world after the perfect pattern of his own being, "for the deeds of the best could never be or have been other than the fairest," goes on to apologize for the world's imperfections on the score that the deity turned over the details of creation to lesser hands. It was inevitable that disciples of his philosophy, fallen upon evil days, should have converted this into a doctrine of progressive descent, of creative degeneration, such as indeed we find in that Neo-Platonic pessimism which so mirrors that of India that we are accustomed to see in it a borrowing from the Orient.

But I believe that when we note how similar conceptions in America seem to lead to a similar pessimism, our conviction that the conception is itself author of the pessimism will gain strength. For the Aztec betrays a sophisticated world-weariness worthy of disciples of Schopenhauer. When a child was born into the world it was addressed:

You are come into a world where your parents live mid toils and fatigues, where there are broiling heats and windy chills, where there is neither pleasure nor contentment, for it is a place of labors, of torments, and of cares.

And even of a dead king they could only pray:

Thou hast given him to taste in this world a few of the sweetnesss and suavities which thou hast made to pass before his eyes like will-o'-the-wisps which vanish in being born.

Pessimism, then, seems to have been the natural accompaniment

of this conception of an immanent and transcendent God in all centuries save the nineteenth. How are we to account for the new value which this century has placed upon the conception?

The answer is complex.

Historically the nineteenth century is heritor of eighteenth century optimism. The naturalism of the eighteenth century was a reaction against the pessimism of the earlier ascetic Christianity; its mood was one of content with nature and its moral a readiness to accept and find good nature's self-revelation. The doctrine of evolution in the nineteenth century seemed to be this revelation: it seemed to mean progressive realization of the good. The conditions of modern life have favored this interpretation, and philosophy and theology alike have been caught in its optimistic swing. Hegel, it has been said, gives us in his dialectic evolution the inner interpretation of what Spencer interprets outwardly: the two systems are complementary narratives of world-progress.

With the historical pressure all toward optimism, it is no marvel that *logic* (ever an accommodating servant) easily adapts itself to the push of circumstance. And, as a matter of fact, the adaptation is not strained. The dialectic deduction of nature from God must, to be sure, be regarded as a *descent*—as Platonist, Gnostic and Hindu have regarded it—so long as your thinker maintains the cosmic, the ontological point of departure; but if instead his thinking start from human powers of knowing, if his deduction be from the psychology of human reasoning, first analyzed and then inductively generalized as a predicate of the universe, then the process is legitimately interpreted as an *ascent*, an evolution. And this is precisely what German transcendentalism has done. Kant psychologized metaphysics; and in the hands of the philosophers of the absolute, especially Hegel, human thought-processes were treated as epitome and mirror of the being of the world. The starting-point was humanistic and hence the goal of perfection was found to be an implication of human nature, emerging from human nature by a smooth and felicitous progression.

To be sure, in so far as this progression was withdrawn from time we have as the fond of this reasoning the unhappy quibble of timeless change, an antinomy of points of view (the human and the absolute) that to the lay mind is insoluble, but this difficulty is one readily concealed by cloudy words, for the *mimêsis* and *methexis* of Plato are terms descriptive of a no more irreconcilable conciliation than are the "transfusion," "transmutation," and "transcendency" of the absolutists.

But history urged and logic admitted optimism, and the times

had need of a new conception of God. There remains but to ask how far this conception answers the needs of its generation.

Now there are undoubtedly some thousands of Protestant clergymen who, with the more informed of their laity, hold and find comfort in the transcendentalist idea of God. But I regard it as undeniable that the mass, even of enlightened Protestantism, is still in the Reformation, or at most is not beyond the eighteenth century, whereas Catholicism, as we know, is still assertively Medieval. Unchurched Christendom is in the main eighteenth century. On the other hand, by underground channels—Theosophy, New Thought, Christian Science—Asiatic philosophy is undoubtedly inflowing to an ever-rising flood. The assimilation of transcendentalist ideas seems to show more vitality outside than inside orthodoxy.

But what of the intellectual leadership—the thought of the best minds?

Here we have no right to turn to philosophers; it is philosophy that we are judging. But we have a right to turn to the poets, for the poetry for which any generation cares is just index of the spiritual development of that generation. And judged by this standard of poetry, I think we can say that, in the English-speaking world at least, transcendentalism has failed. I do not mean to say that it has failed to command belief—that were a rash and hasty judgment; nor yet that it has failed to bring a certain elegiac comfort into many lives. But just here is my point: the comfort that it has brought is elegiac; it is the comfort of resignation. Transcendentalism has failed to preserve optimism even with the advantage of the tremendous optimistic momentum which had been given by eighteenth-century French humanitarianism and English naturalism.

The elegiac tone of modern poetry is too conspicuous to need much illustration. Yet in a certain instance there is indicated a trend so significant that I can not refrain from pointing it. Two of the most widely read of modern English poems appeared within a decade in the middle of the nineteenth century. The first to appear and the first to take and hold the sympathy of the modern mood was Tennyson's "In Memoriam." It is a poem which, perhaps best of all, voices the elegiacism of the Victorian epoch: the mingling of wistful faith and material doubt, of passionate optimistic hope and dread of compelling pessimism. The immanent and transcendent God is there, the God far-off and perfect, who transforms the compelling evil of experience into some final blessing—

O yet we trust that somehow good
Will be the final goal of ill . . .

and the evolutionary ascent is there, but the upward-straining mortal

vision deseries only a mounting gloom betwixt humanity and God; the heaviness of doubt outbalances the buoyancy of faith:

I falter where I firmly trod,
And falling with my weight of cares
Upon the great world's altar-stairs
That slope through darkness up to God,

I stretch lame hands of faith, and grope,
And gather dust and chaff, and call
To what I feel is Lord of all,
And faintly trust the larger hope.

This is the first of the two poems, read and reread for a generation. The second, composed a ten-year later, after lying almost unknown for a generation, is now, I venture to guess, read a hundred times to the once of "In Memoriam," and quoted thrice a hundred. And yet the "Rubaiyat" of Fitzgerald's Omar owns not even the lame faith of Tennyson. It is pessimistic to the core, shot through with the impudence and pain of hopelessness. As to man, the best that Omar can offer is a Cyrenaic advice to snare the pleasures of an evanescent sensation, to banish thought with a loud and joyless laughter, and to meet death with Stoic dignity—

So when the Angel of the darker Drink
At last shall find you by the river-brink,
And, offering his Cup, invite your Soul
Forth to your Lips to quaff—you shall not shrink. . . .

And as to God, his best is an indifference that is akin to blasphemy:

O Thou, who Man of baser Earth didst make,
And ev'n with Paradise devise the Snake:
For all the Sin wherewith the Face of Man
Is blacken'd—Man's forgiveness give—and take!

Surely the captivation in which this poem holds the modern mood betrays the utter bankruptcy of transcendental optimism!

H. B. ALEXANDER.

UNIVERSITY OF NEBRASKA.

REVIEWS AND ABSTRACTS OF LITERATURE

Die Geschichtsphilosophie Auguste Comtes kritisch dargestellt von Dr. philos. Georg Mehlis. Leipzig: Fritz Eckardt. 1909. Pp. 158.

When Comte's system of philosophy is viewed in the light of preceding systems, its weaknesses spring to view, and it appears rather as an aberration than as an advance. But, if in its light we view the important tendencies in current thinking and activity, these are by it not simply pictured in prophecy, but organized, vivified, and idealized. This second way of studying Comte would naturally center around his philosophy of history; and now, half a century after his death, an essay along this line would be

of great interest. Hence it is disappointing to find that Dr. Mehlis writes without reference to present political and social conditions, or even to those current philosophies that seem closest to positivism.

None the less this essay is a stimulating work, in German that is incisive and clear. The chapters are: I., Comtes dogmatischer Positivismus; II., Comtes Geschichtsphilosophie und die Romantik; III., Soziologie und Geschichtsphilosophie; IV., Comtes Wertsystem; V., Entwicklung und Fortschritt; Schluss.

Comte's use of the term "metaphysics" refers solely to the individualizing, anti-social, and enervating tendencies of critical and sceptical philosophies. These his own "relativistic" theory escapes, however, only through "das Nichtzuendenken seiner Thesen." That theory carries him to the point of saying that truth changes and differs for different individuals and different nations. But his philosophy of history and his "positive policy" are in fact dominated by the conception of a truth underlying all others, and of an ideal to be recognized by all men.

The third chapter discusses the logic of science on the basis of Rickert's distinction between the natural sciences, which deal with fixed relations between recurring events, and historical science, presenting individual events in their concrete, unique relations with one another and with the whole of what has happened. Comte deals with the materials of human history from the point of view of a natural science, viz., sociology, reaching his culminating scientific result in the celebrated law of the three stages. However, the conception of history as the presentation of a unique process forms the background of Comte's philosophy. And Dr. Mehlis, in Chapters III., IV., and V., is largely concerned with the logical conditions under which this implicit philosophy of history might become explicit and consistent with itself. All scientific history rests upon the adoption of a single, ultimate, absolute value (Wert), since the essential uniqueness of any event can be demonstrated only by showing that it is a certain stage in the realization of that supreme value or good. This requires the formulation of a science or system of values, in contradistinction to the generalizations of the sciences of matter of fact, or natural science. Hence Comte's conception of the uniformity of scientific purposes and methods is at fault. An interesting, but in my opinion unsuccessful, attempt is made to show, in Chapter V., that Comte's belief in unending progress is inconsistent with his position that infinite perfection is an irrational term.

The supreme good epitomized in the term humanity is discussed from the standpoint of German romanticism. Romanticism essentially is an emphasis upon the progress of mankind measured in terms esthetic and religious. French romanticism is vitiated by "traditionalism"; that is, the medieval world-view, which subordinates the individual man to a system to which he belongs. Here an ascetic spirit, so marked in Comte, leads to a depreciation of the individualism of the Enlightenment, of the Renaissance and the Reformation, and of Greece. Dr. Mehlis seems to me to leave obscure the roots of Comte's complete and vigorous renuncia-

tion of the socialistic scheme of things. But he brings into prominence the motives that led him to condemn the various forms of theism, and the other "abstractions" that reinforce individualism. Comte's final exaltation of "fetichism," which may perhaps best be rendered animism, is also thus explained, since it inspires, in the enlightened soul, not fear, but love for nature, and keeps the intellect to its task of framing useful, practical conceptions of the world.

Dr. Mehlis attacks the Comtean philosophy of history and its fundamental conception of value or the good on the ground that "from the revolt (*Auflehnung*) of individuals against the totality all progress has come" (p. 157). The mere conception of the dominant whole, humanity, leads to the ascetic subordination of art and religion to morality and use, and thus to a world-view radically defective in esthetic and religious appeal. Since this is probably the chief thesis of the essay, it may be in order to compare with it the basis of Edward Caird's rejection of Comte's ideal. For the latter is based not on a mere demand for individuality or upon an unsupported standard of esthetic worth, but upon the assertion of a matter of fact.

Nature and man, says Caird, can not be united as Comte would have it, by subordinating the former to the position of mere material for man's activity and advance; simply because by nature we mean, as Kant has shown, an existence woven in rational patterns. Intelligence, therefore, is not *merely* a product of biological conditions, since these conditions at every stage and from every possible point of approach are already rational in structure. Nature is thus more than material, more than a fetich. "Humanity" sinks then to the second place, as the individual, standing in relation to the life and spirit of nature, finds in that relation a condition that enables him to face the demands of society not with a revolt, but with an humble and invincible freedom, with a knowledge and an ideal by which those demands must be tested. Thus from a matter of fact Caird sees spring the demand for, or rather the recognition of, individuality, together with such esthetic and religious features of the world-view as individuality in every age occasions.

Two minor points may be offered in criticism of Dr. Mehlis's essay. Whereas Mill, in his review of Comte, makes the distinction between the earlier and the later Comte fundamental, Dr. Mehlis makes it incidental. And I think it is partly in consequence that rather startling inconsistencies appear in his remarks, which a study of their context does not mitigate. For example, on page 67 we are told that Comte's interpretation of history emphasizes the unique and neglects the uniform and recurrent, whereas on page 102 it is stated that Comte is so interested in the recurrent that the unique appears to him irrelevant.

On page 133 Dr. Mehlis intimates that this great work of Mill's is "verständnisslos," and blind to the "geschichtsphilosophisches Interessante" of the positive policy. But Comte's philosophy of history, unlike Hegel's, centered in prophecy. And Mill's sympathy with and comprehension of Comte was such that he could not, at this day, any more than when he

wrote, have ignored, as Dr. Mehlis has done, the striking relation which Comte's philosophy, and especially his philosophy of history, bears to the issues that have worked their way into the world at large in the fifty odd years since Comte died.

PERCY HUGHES.

LEHIGH UNIVERSITY.

The Philosophy of the Enlightenment. JOHN GRIER HIBBEN. New York: Charles Scribner's Sons. 1910. Pp. xii + 311.

This volume is the first of a series edited by Professor Hibben and dealing with the epochs of philosophy. The purpose which Professor Hibben seeks to realize in this book is to portray the various tendencies which were operative in the period of enlightenment and which, coming to a focus in the philosophy of Kant, prepared the way for the intellectual life of our own times. In pursuance of this purpose he has brought together within the compass of a single volume the chief elements of eighteenth-century thinking, and by skillful handling of his subject-matter has managed to secure an excellent perspective of the period covered in his treatment. The difficult task of properly balancing general outline and detailed presentation has been accomplished in a manner which in many respects is deserving of admiration. Since it is precisely the organization of the material rather than originality of interpretation that constitutes the aim of the volume, Professor Hibben may be congratulated upon the result which he has achieved.

As a brief summary of the topics included in the work, it may be said that the discussion begins with English empiricism as represented by Locke, Berkeley, and Hume, to each of whom a separate chapter is devoted. It then takes up the materialistic movement, which arose as an alternative to the psychologizing tendencies of the movement begun by Locke, and which owes some of its inspiration to him. Following this comes a chapter on Rousseau's philosophy of feeling, which was called forth as a protest against the barren intellectualism of the time. German rationalism is then taken up, the philosophy of Leibnitz and the conflict of typical philosophical influences in Germany being discussed in separate chapters. Then comes an outline of Kant's critical philosophy, followed by a concluding chapter on the practical influences of the enlightenment. A chronological table of the philosophical works of the period is added as an appendix. The form of presentation is such as to make the book suitable for laymen or students who have formed some acquaintance with philosophy. For those who have already acquired some knowledge of the history of modern philosophy the simple and untechnical exposition can scarcely fail to be illuminating and suggestive. The treatment not only furnishes an excellent bird's-eye view, but, with a limitation to be noted presently, the critical parts bring out the familiar difficulties encountered in Locke, Berkeley, Hume, and Leibnitz with clearness and force.

The least satisfactory part of the book, perhaps, is the chapter on the materialistic movement. Apparently the subject has little interest for the author, but is included because it constitutes a part of the general subject. Both criticism and definition are conspicuously absent. In view of the

success with which the author brings out the inherent difficulties of English empiricism, it is both surprising and disappointing to find that no attempt is made to analyze out the meaning of matter or to trace out the shifts and assumptions by which the respective theories are rendered plausible. The result is naturally that instead of a study of the materialistic movement we have essentially a series of comments on the beliefs of the various individuals connected with the movement.

A rather unusual feature of the book is the fact that in the somewhat detailed presentation of Kant's philosophy there is scarcely a hint of criticism. The emphasis falls almost entirely upon those aspects of Kant's thinking which, from an idealistic standpoint, may be regarded as a solvent of the difficulties in which the earlier empiricism and rationalism had become enmeshed. The claims of apriorism and the shortcomings and crudities generally are passed over in order to make prominent the Kantian contention that thought fulfills a constitutive function in experience. It is claimed for Kant that "the line of his endeavor indicates a direction of thought, and a method of critical analysis, which the philosophy of the *Aufklärung* had failed to discover. That movement of thought culminates in him, for he conserves in his philosophy the elements of truth which it had evolved, and at the same time he overcomes its obvious defects and limitations. To mark the scope and function of experience, to establish its complete dependence upon the interpreting, informing, and ordering mind, to discover a world of moral law and life, wherein the free spirit of man moves toward his determined ends, modifying the mechanical conditions of the causal series of events so as to compel them to obey his will; to find, moreover, in such a world the presence of a divine compulsion, and to discern within the beauty and purpose of nature the presence of a kindred spirit—such has been, in part at least, the high office which Kant has performed in presenting to the thought of his age, and, indeed, of all ages, the truth as he saw it" (p. 251).

The idealistic attitude revealed in this quotation comes to the surface constantly throughout the volume. To the reader who does not share this attitude it furnishes occasion for legitimate criticism of the book. In connection with Locke, for example, it is stated that "what is wanted is a central unifying principle which is capable of organizing the various parts into a complete whole. And such a principle it is possible to discover in the reason, working not *upon* but *within* the elemental materials given in consciousness, informing them according to its constructive power, which power is simply the expression of the inherent necessities of the mind's essential nature itself" (p. 38). Later it is said that "not merely are the fully formed products of thought skillfully ordered by the mind, but at the very threshold of knowledge itself, where the crude elemental material is furnished through the senses, the mind is already *actively* engaged in fashioning and informing the given material according to its own native powers" (p. 230). This conclusion is supposed to follow from the breakdown of the theories under consideration. Passages like these, which are typical of the book and typical of idealism generally, were sufficiently conventional a decade or so ago to pass without chal-

lenge. But idealism has been under fire so much of late that one may reasonably expect a writer who employs such phraseology at the present day to indicate what it really means. That "mind" should operate upon "crude elemental material," when, according to the same theory, this material is merely an abstraction from the "fully formed products," and not a preexistent entity, is extremely mystifying to the uninitiated. Whether or not idealism is a defensible theory, Professor Hibben's book would be more effective if it did not assume throughout what is so very much in dispute, and if it did not, consequently, tend, in a measure, to confine criticism to an unsupported reassertion of idealistic contentions.

UNIVERSITY OF ILLINOIS.

B. H. BODE.

Principles of Political Economy with some of their Applications to Social Philosophy. JOHN STUART MILL. Edited with an introduction by W. J. ASHLEY. London and New York: Longmans, Green & Co. 1909. Pp. liii + 1013.

It is doubtful if any work on economics will ever exercise a wider and more enduring influence than Mill's treatise. The bibliographical note prefixed to this edition records no less than twelve editions, one of them reprinted eighteen times, by the present publishers. This new edition is interesting mainly for the introduction by Professor Ashley, pointing out the chief intellectual influences that determined Mill's economic and social views, and for the indication in the notes of all the significant changes or additions to the text made by Mill in the course of the six editions that he himself revised. The laborious task of comparing editions has apparently been done with care, and the student is thus enabled to observe the changes and development of Mill's thought between 1848 and 1871. It is a pleasing impression that one thus gains of the well-known candor of the man and his readiness to revise his opinions in the light of new evidence. Professor Ashley has appended twenty pages of references to the chief writers, mainly English, who since Mill's time have dealt with the principal topics treated by him. The notes include Mill's recantation of the wage-fund doctrine and his latest views on socialism. A careful index, prepared by Miss M. A. Ellis, completes this useful edition of a really great book. It is well printed, in a single volume of convenient size.

COLUMBIA UNIVERSITY.

H. R. MUSSEY.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. September, 1910. *Recherches expérimentales sur l'illusion des amputés et sur les lois de sa rectification* (pp. 226-240): C. HÉMON. — The illusion is suspended by evoking a real sensation, qualitatively like the mental image whence the illusion springs, and related to a symmetrical part of the body. *La nature psychologique de "l'état de grace"* (pp. 241-261): G. TRUE. — Grace is an emotional quieting in which the strife between opposing tendencies of conduct closes. *L'induction en mathématiques* (pp. 262-269): G.-H. LUQUET. — Mathematics is related to the other sciences through its inductive procedure. *Notes et discussions. Le "phénomène psychique"*: G.-L. DUPRAT.

À propos de la logique de la contradiction: L. VIAL. *Revue Critique*.
 Les fonctions mentales dans les sociétés inférieures: PARODI, *Le problème moral et la pensée contemporaine*: F. PAULHAN. Miceli, *Il sentimento del dovere*: G. RICHARD. G. Mazzalorso, *Schema di una dottrina intorno la Giustizia è il diritto*: G. RICHARD. A. E. Davies, *The Moral Life*: G.-L. DUPRAT. A. Binet, *Les idées modernes sur les enfants*: G. COM-PAYRÉ. E. Roehrich, *Philosophie de l'éducation*: L. DUGAS. L. Célérier, *Esquisse d'une science pédagogique*: L. DUGAS. Dr. Mignard, *La joi passive*: CH. BLONDEL. Bechterew, *La suggestion et son rôle dans la vie sociale*: PH. CHASLIN. A. Mairét et E. Salager, *La folie hystérique*: PH. CHASLIN. L. C. Gatewoold, *An Experimental Study of Dementia Præcox*: P. C. B. A. Hartley, *The Subconscious in the Light of Dream Imagery*: G.-L. DUPRAT. G. G. Bertazzi, *Storia genetica dell' Idealismo platonico e dei suoi significati*: C. HUIT. *Revue des périodiques étrangers*.

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NOTES AND NEWS

THE American Philosophical Association held its tenth annual meeting at Princeton University on Tuesday, Wednesday, and Thursday, December 27, 28, and 29, 1910, in accordance with announcements already published. The program extended through three sessions, which were well attended and marked by vigorous discussion. On Tuesday afternoon Professor and Mrs. Hibben received the members of the association at their home. In the evening the retiring president, Professor Charles M. Bakewell, of Yale University, read his address on "The Problem of

Transcendence." After the address the members of the association were informally entertained at the Nassau Club. On the evening of Wednesday the association joined in the annual smoker at the Princeton Inn. At the business meeting called on Wednesday afternoon, officers for the ensuing year were elected as follows: president, Professor Frederick J. E. Woodbridge, of Columbia University; vice-president, Professor Walter T. Marvin, of Rutgers College; secretary-treasurer, Professor Edward G. Spaulding, of Princeton University; new members of the executive committee, to serve for two years, Professor Dickinson S. Miller, of Columbia University, and Professor Theodore de Laguna, of Bryn Mawr College. A fuller notice of the meeting of the association will appear in a later number of the JOURNAL.

THE American Psychological Association held its annual meeting at Minneapolis, December 29, 30, and 31, in affiliation with the American Association for the Advancement of Science and a number of other scientific associations.

THE Fourth International Congress of Philosophy will meet during the Easter vacation in 1911 at Bologna. The Committee of the Congress invites cooperation from all who interest themselves in the questions of philosophy. Contributions are to be addressed to the General Secretary, Professor Giulio Cesare Ferrari, Bologna, Piazza Calderini 2. The subscription fee to the Congress is twenty-five francs. A program will be sent on application to the secretary.

PROFESSOR JAMES R. ANGELL, of the University of Chicago, will give three lectures at the Union College in January and February. They will be known as the Ichabod Spencer lectureship series, and are supported by the endowment of \$75,000 for the department of philosophy which was recently made by Mrs. Catherine Leavitt, of Washington, in memory of her father, Ichabod Spencer.

THE Huxley lecture at the University of Birmingham was delivered on November 23 by Professor Percy Gardner, professor of classical archeology in the University of Oxford. The subject of the address was "Rationalism and Science in relation to Social Movements."

A DESPATCH from Munich says that the oath disavowing modernism, required of theological professors by the Vatican, has caused a schism in the faculty at the University of Munich. One professor has retired from the church.

PROFESSOR JOSIAH ROYCE of Harvard University has accepted the invitation of the trustees of Lake Forest University to deliver the next course of Bross lectures at Lake Forest, Illinois, in November, 1911.

THE Henry Sidgwick memorial lecture, at Cambridge University, was given by Sir George Darwin, K.C.B., F.R.S., on "William and Caroline Herschel," in the hall of Newnham College, on December 3.

THE Herbert Spencer lecture at Oxford on "Evolution, Darwinian and Spencerian," was delivered by Professor R. Meldola, F.R.S., on December 8.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE GOODNESS AND BEAUTY OF TRUTH. II

V

IN our running review we have traced the development of a great conception, that of a being whose character is at once perfect truth and perfect goodness and perfect beauty. At the outset this being is an Emperor-God, throned above a world which is his footstool; at the end the being is the veritable *anima mundi* regarded as the saving transfiguration of a blotched and blemished world of experience.

At the outset the truth and goodness and beauty of God could be made to seem at least imaginatively consistent with the falsities and evils and ugliness of life owing to the dramatic separation of creator and creation, of king and kingdom, of judge and judged. At the end we find the vividness of experience is too blindingly real to permit the mind to perceive and hold those logical subtleties which seek to eliminate sin and error merely by putting a new face on a sullied universe: the transcendental outlook may mean salvation, but it is not the salvation for which a sick and distressful humanity yearns.

Is the conception of God, then—the Christian conception—bankrupt? Is there no counsel for a feverish and distempered age save the *sparge rosas* of a Horace, no solace save an Omar's pitiful flytings with Fate?

Frankly, the orthodox conception, whether Hebraic, deistic, or transcendental, in so far as it rests upon the metaphysical trinitarianism which unites in the divine person all the goodness and beauty and truth of the world, making these the world's *whole* truth—frankly, this conception is bankrupt. It runs against the grain of experience, and however easy it is for human nature to hold to faiths that are contrary to reason, it is impossible for it long to continue in beliefs that cross the testimony of eyes and ears and inquisitive fingers: even the doubting Thomas was convinced of his Lord's beatific being by the touch of his grievous corporeal wounds.

But the orthodox conception is by no means the only possible, nor even the only Christian, conception of the divine nature. Along with Hebrew and Greek, Persian doctrines entered into the making of Christianity. Historically, to be sure, Manichæan dualism has always been heresy—orthodox Christianity would none of it—but the tale of history is yet in the telling, and in the modern reversion to Omar's keen Persian sense of a twy-bladed living we seem to find the heresy resurgent, as ever it must be so long as experience itself is Manichæan.

In its essence the Manichæan conception is this: The universe is an interweave of good and evil, of ugliness and beauty. Truth is no attribute of a part of these qualities, denied of the other parts; the powers of darkness are as real as the powers of light: they are genuine *powers*, capable of designing and wreaking ill. And God is no embodiment of truth's totality; rather he is all goodness and beauty, the leader of the powers of light against the powers of darkness in a struggle that is eternal.

God, on this view, is neither all-knowing nor all-powerful. The struggle in which he is engaged—the struggle which appears to us as the evolution of the world, as the dramatic action of creation—is no illusory, theatrical struggle; it is a real and tense conflict in which each combatant, the good and the evil, must be eternally vigilant or eternally overcome.

The part of man in this struggle is heroic. Man is placed by his creator in the van of the conflict against the powers of cosmic night, and placed there because there is real and urgent need of human prowess in the fight. It is the post of honor and of danger, and the reward of valiancy and fortitude is the glory of conquest over the enemy of God and man.

In the Hebrew view, man is the creature and servitor of his all-powerful Lord and King. It is no human part to lift pretending eyes to the awful majesty of the divine ruler or curiously strive to pierce the veil of immensity which dimly magnifies the huge and distant seat of the Almighty: "He holdeth back the face of his throne and spreadeth his cloud upon it." In the Persian view, on the other hand, man is the comrade and helper of God. Even Khayyam, though the pall of Moslem fatalism had robbed this partnership of its militant spirit, yet feels in a wistful, hypothetic mood the tug of its friendly humanism:

Ah, Love! could you and I with Him conspire
To grasp this sorry Scheme of Things entire,
Would we not shatter it to bits—and then
Remould it nearer to the Heart's Desire?

"Could you and I with Him conspire!" . . . The strength of this humanistic heresy lies just in the fact that "you and I" are valued and needed partners in his combat with evil and ugliness. Man is given a doughty and dignified position in "the Scheme of Things," and because God himself owns his need of man the divine wisdom and beauty become object of a chivalrous and devoted love rather than of a prostrate adoration.

This is humanism—a philosophy and theology of experience as we know and name experience in the chance and change of every-day living, experience raw and fresh and untransmuted. It is true to life. It is not untrue to religion. Is it false to logic? I believe not.

Near the beginning of this essay I said that the identification of all truth with the goodness and beauty of God could not have satisfied human reason save for the duplicitous meaning of the measures of truth, the duplicity of a goodness that is in part beauty and in part something other than beauty. Let us ask more narrowly after the relationship of these ideas.

The values of truth—and by this I mean the qualities of realities which make them seem worth while to human living—are of two sorts: they are *moral* and they are *esthetic*. No matter which standard we are concerned with, the desirable truths, the realities that do seem worth while, we call the *Good*. "The Good," says Aristotle, "is that at which all things aim"; and Plato before him, as I have already quoted, has defined the Good as "that for the sake of which something else is done," as an *end* of action.

Now for expediency in talk we may be justified in speaking of custom and convenience, of merely *moral* conduct, as good; but it is certainly not a good in this teleological sense. Goodness in conduct is a means, not an end; it is social facilitation, but society exists for something other than mere smooth running. To quote Aristotle yet again: "He who would duly enquire about the best form of a state ought first to determine which is the most eligible life"; for "the end of individuals and of states is the same," viz., the ideal life; and "the good man as such is the measure of everything." In other words, moral goodness is good only as an instrument to ideal living, in which alone is the truth of goodness.

And this ideal living, does it represent a value that is moral in some other than the root meaning of "moral," as designating the mutual concession which makes human intercourse possible, or does it represent a value that is properly to be termed "esthetic"? I regard the latter view as the feasible one. For if we look at human ideals of life's value in the broadest mode, I see but three types of experience that stand out as goals, proximate or ultimate, of men's conscious endeavor. There is, first, happiness; there is, second,

mystic union with divinity; there is, third, the zest of creative endeavor. Now all three of these are types of *experience*, of *æsthêsis*, of realization rather than of preparation. They are in each case the end and object of moral conduct, and in themselves are non-moral. Each is properly esthetic, though of course it is doing violence to our common speech to infer that each thereby involves an ideal of beauty. But let us consider them case by case.

The ideal of happiness may be (1) mere sensuous delight, the Cyrenaic's lustful indulgence of perception and appetite; it is that pleasure for the power of which, says Plato, your noble nature feels "an instinctive repugnance and extreme detestation." Again (2) happiness may mean, as Aristotle would have it, "virtuous activity," but Aristotle reasons in a circle, for "virtue" is for him "human excellence," and his whole eudæmonism resolves virtue into an undefined "right living": *agathon* is in *eudæmonia*, *eudæmonia* is in *aretê*, whence *agathon* is in *aretê*, it is a fruitless quest. Finally (3) happiness may mean supersensuous ecstasy, be it the intoxication of thought or the bliss of beatific vision. If happiness have any other meaning than these three, then it is an incident and not an end of conduct.

Now the third of these meanings I take to be identical with that ideal of mystic union which regards such union as a state of conscious felicity. For mystic union may, of course, be of the Oriental, pessimistic type—an "absorption" which is no more nor less than annihilation. But if annihilation is not meant, if what is meant be a state of unalloyed and unaffected bliss, then we are back to the paradisaical ideal of orthodox Christianity, and this ideal I have maintained is out of the modern temper.

I do not question that some men may find their life's ideal in the most material Cyrenaicism. I do not doubt that many ascetic souls have sold the happiness of this life for felicity in a life to come, or that many saintly ones have found in this life moments of bliss that have effaced for them all sense of life's encompassing evils. But I do affirm that for the normal mind of our period such ideals are impossible as the true and universal measures of goodness.

There remains, then, but the one other form of *æsthêsis*, the truly esthetic zest of creative endeavor. This is truly esthetic because it identifies, as Plato was ever instinctively identifying, the good and the beautiful. The essence of the ideal has ever been beauty, in so far as the ideal has affected human conduct: it is the state not yet realized, but challenging the effort to realization, the pattern which, because it is an ever-recessive pattern, is ever-divine, whose actualization is the motive and the despair and hence the life of an evolving world. In the light of our meager achievements imagination charts

mighty conquests of the domain of darkness, patterning empires of wonder peopled by forms lovely and divine, while beyond them and beyond in the bowels of the cosmic gloom, dimly emergent, yet nobler gods uprear Titanic forms.

Life is action. Action is condemnation of the present reality for the sake of the ideal. We live in our idealizations, which is to say that we live in the conquering endeavor of an ever-creative world. For a living God as for living men there are beauties to be attained and there are imperfections to be overcome. This is Manichæism, and it is the philosophy of evolution as evolution is manifested to us in mortal experience.

VI

Passing from the consideration of the Good to that of its opposite, we find, I believe, that the Manichæan view is the only one that gives us a square and downright solution of the problem of evil. Evils are of four sorts: immorality, sin, pain, and ugliness. Each of these, on the view taken, is as genuine a reality as is its opposite. By naming bad conduct *immorality* we do not make it mere absence of good conduct; by calling evils defects and imperfections we do not transform them into mere privatives of the good; they are genuine and forceful and creative in their own rights. We are honest with experience, accepting its several testimonies at their face values.

And in the case of the bad, as in the case of the good, we make distinctions. Immorality, for example, resolves into inexpediency; evil between man and man is hindrance of the good life; it must be dealt with as a problem and not as a calamity, cosmic and overpowering.

Further, it lies between man and man and not between man and God. For the evil that obtains between man and God we have another name—*sin*. If sin be a social transgression, after the analogy of our transgressions against mankind, then we have in it but a special case of immorality. But by sin we mean something more than this, something that comes home to the transgressor; sin is a breaking of troth with one's own and acknowledged ideals; it is a denial of idealization, a denial of life, and its inevitable wage is death. To sin is to violate the noble and outrage the divine in human nature.

Immorality, then, is inexpediency, human inexpediency, and it is bad because it hurts the chances of ideal living. It is not a relation that holds between man and God, and we have no right to ask, and make no sense in asking, that God be moral: "How should a man be just with God?" But that which outrages the ideal, that which is treasonable to the good, that is sin, and of that God takes account.

Of the two objective phases of the bad, pain and ugliness, we can make similar division. For ugliness is the very denial of ideal living; it is evil made into a goal and an end; it is the utter thwarting of that beauty which is the spur of man's endeavor. Pain, on the other hand, is but a condition of struggle, a condition, even, of nobility and ideality and of the being of beauty itself. "There are combinations of pleasure and pain in lamentations," says Plato, "and in tragedy and comedy, not only on the stage, but on the greater stage of human life."

In ugliness and sin, therefore, are given the measures of the truth of badness in the universe, whereas pain which is a symptom of a striving world-nature, and faulty endeavor which is a symptom of striving human nature, are signs of life and of an up-struggling mind; they are token of cosmic health, if health means progress.

Some of the sorriest muddles in which human thinking has been embogged have been the consequence of confusion of the instrumental and the final goods and bads of experience. We have sadly over-strained our adjectives in applying "good" and "bad" to so diverse contrasts. A shrewd instance is Milton's nobly infernal Satan throned in hell,

by merit raised
To that bad eminence.

Indeed Milton's whole purpose comes precious near fiasco from the very fact that Satan's sin is mainly immorality, whereas his Titanic revolt against Omnipotence is in itself beautiful. What makes beauty in human character is never its morality, but always its nobility, and it is therefore not wonderful that the theologian should have lost to the poet, for the poet's insight was the true one.

The whole error of asceticism has lain just here. In its effort to avoid the inexpediencies of life it has denied the possibility of beautiful living. The theological result is a fearful dichotomy of existence: a wallowing in ugliness here below for the sake of a safe and tame paradise hereafter. When I was in my sixth or seventh year I had a dream which so stung my conscience that its memory has remained ever fresh. In my dream I thought that the choice of heaven or hell was placed before me. Heaven, as I saw it, was full of silvery clouds and silvery-winged harpers and there was a great light in its midst which was the throne of God, and it was reached by three little wooden stairs. Hell was a battlemented castle rising from a bottomless gloom, yet below where I stood so that I could look over into it. Now in my dream I knew that I *ought* to choose heaven, but I looked down into hell once, and twice, and thrice, and I saw in it braziers of burning fire, and demons black and red and demons winged and demons in the shapes of fantastic

and monstrous beasts, and I saw there a tall knight clad all in sable armor . . . and in my dream I chose hell.

In this dream the troublesome "ought" that lay upon my conscience was moral; the choice was esthetic and instinctive. In the tale of "Aucassin and Nicolette," Aucassin answers the threat of hell in this wise:

In Paradise what have I to win? Therein I seek not to enter, but only to have Nicolette, my sweet lady that I love so well. For into Paradise go none but such folk as I shall tell thee now: Thither go these same old priests, the halt old men and maimed, who all day and night cower continually before the altars and in the crypts; and such folk as wear old amices and old clouted frocks, and naked folk and shoeless, and covered with sores, perishing of hunger and thirst, and of cold, and of little ease. These be they that go into Paradise, and with them have I naught to make. But into Hell would I fain go; for into Hell fare the goodly clerks, and goodly knights that fall in tourneys and great wars, and stout men at arms, and all men noble. With these would I liefly go. And thither pass the sweet ladies and courteous that have two lovers, or three, and their lords also thereto. Thither goes the gold, and the silver, and cloth of vair, and cloth of gris, and harpers and makers, and the prince of this world. With these would I gladly go, let me but have with me Nicolette, my sweetest lady.¹

Between the tame felicities of an ascetic's paradise and the red and burning magnificence of hell there is but one choice, and that the Pagan choice. Between a world without suffering and a world without nobility we can not hesitate. And I think there is no more terrible—because none so human—arraignment of the God of the theologians than in the fifth canto of the Divine Comedy:

Se fosse amico il Re dell' universo,
Noi pregheremmo lui per la tua pace,
Poichè hai pietà del nostro mal perverso.

Francesca is infinitely nobler than the Most Catholic King of the Universe, infinitely nobler than the God who has punished her; and so, in the face of that infinite justice he is sent to uphold, the poet justifies her:

Amor, che a nullo amato amar perdona,
Mi prese del costui piacer sì forte,
Che, come vedi, ancor non mi abbandona.

Her human love survives triumphant mid the torments of hell, and it ennobles hell, and it glorifies hell.

Surely it is no light fact that the lasting appeal of every great religion has been its humanism and its heroism. It is not the distant perfections of God, but the near glow of the divine in the human, of the *divinity humanized*, that has drawn and held the hearts of men. This is wonderfully shown in the great religious

¹ Andrew Lang's translation.

dramatic poems. In the "Prometheus" of Æschylus the powerful and vengeful Zeus is forever ugly; it is for the Titan, punished because he "loved men overmuch," that the tragedy awakens a noble and enduring pity. In "Job" it is the colossal faith of the patriarch, "though he slay me yet will I trust him," rather than the conduct of a deity who makes of his servant a sport and a spectacle, that renders the book so passionately and so grievously human. And in Milton's epic the shudder with which we see paid the grim wage of the heaven-fallen rout—

Sublime with expectation when to see
In triumph issuing forth their glorious Chief;
They saw, but other sight instead, a crowd
Of ugly Serpents,—

this shudder at least shares their "horrid sympathy." In each case, Prometheus against Zeus, Job against Jehovah, Satan against the Almighty, it is the mortal heroism of the creature rather than the immortal might of the Creator that urges in our breasts its answering passion.

From the beginning the element in religion that has appealed most potently to mankind has been the struggle against evil, the struggle after good. And the heroes of religion have been the doughty leaders of this struggle, have been the saviors of men. Orpheus and Mithras and Mani, Moses and Mohammed, Buddha and Christ, all these have been heroic leaders of heroic men in conflict with an encompassing and powerful worker of ill. Salvation, to be felt as real, must be felt as a rescue from a real and terrible danger, and the savior, to be a hero among the saved, must perform his labor at a peril and a cost. Omnipotence and omniscience are out of place in the drama of redemption, and so the hero of this drama is never the all-powerful and all-wise creator, but always his human and suffering delegate.

Those Christians are right who insist that the essential article of their faith is not the nature of the God they worship, but the life of Jesus, his son and exemplar. The God who is the sum of perfections was Greek and Hindu before he was Christian, and the intolerable burden of Christian theology has ever been its notion of an omnipotent and omniprescent creator who could frame a cosmos with such a core of evil that he must sacrifice for its redemption. Such a conception is inherently contrary to sense; it violates the meanings of language; and no metaphysical sublimations can give it an enduring rationality. But the strength and the essence of the Christian faith have never resided here. Rather they have been, and must be, in the life of the Savior of men—in him who was

wearied before he found rest, who was tempted before he was transfigured, who suffered pain and death before he overcame them. In the most magnificent of Christian hymns the note that clutches the souls of men is not the sublimity of the "dies iræ," but the tenderness and pain and compassion of the wonderful stanza—

Quærens me sedisti lassus,
Redemisti crucem passus:
Tantus labor non sit cassus!

The link between God and man is mutual ideality, mutual endeavor, mutual pain: in divine suffering is divine beauty.

What is at once most human and most divine in men is their power of idealizing life. Amid the balks and hurts and rigors of experience the soul instinctively selects certain elements to be glorified with beauty, and this glorified life becomes the pattern of desire. Idealization is a kind of dramatization, and like all drama it selects the pertinent from the haphazard contexts of reality; it is art, and so is neglectful of non-artistic truths. But because it is art it possesses the wistfulness of all creative endeavor, and reflects the huger endeavor of cosmic creation. It spiritualizes life, not by denying the truth of ugliness and sin, but by proclaiming the unconquerable effort of the world to slough these off.

Over and over again Plato darkly affirms the high and perfect independence of other-world beauty, and yet perhaps his noblest passage is one in which, for the moment, he withdraws the divine from the quiet of celestial splendor down into the turbid and aching imperfection of man's life; and so, of the Ideal City he makes Socrates say:

In Heaven there is laid up a pattern of it, methinks, which he who desires may behold, and beholding, may set his own house in order. But whether such an one exists, or will ever exist in fact, is no matter; for he will live after the manner of that City, having nothing to do with any other.

Man's life is shot through with imperfections, yet in the vision of beauty is salvation.

The view that I have set forth is Manichæan and unorthodox, for it represents evil as real and God as a struggling God, hating sin because sin is a cosmic danger and hating ugliness because the creation of beauty is not, nor ever can be, complete. The view is unorthodox, but it may be that God himself is not orthodox.

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DISCUSSION

CAUSE AND GROUND. A REPLY

DR. BOSANQUET'S very interesting discussion of cause and ground,¹ in that it was elicited by an article of my own, calls for some reply. I shall, however, endeavor to confine my comments to two points directly raised in my own article: (1) the difference, if any, between Dr. Bosanquet's ideal of methodology and my own, (2) the question whether his treatment of cause and effect is, in fact, a contribution towards either ideal. The other questions raised in his discussion, the relation between Hegelianism and pragmatism, the larger problem of the philosophy of cause, the general utility of tautology, I shall not attempt to discuss.

The first of these I pass by because I do not think I can rightfully be called a pragmatist;² certainly I am not competent to defend pragmatism against the metaphysical school of thought. The second it will be well to defer because, should it ever come my way to make a contribution to the philosophy of cause, which is doubtful, I should prefer to do so *de novo*, rather than incidentally in a particular controversy. Nor do I think the general utility of tautology relevant to the matter in hand. The widening of the ground of discussion certainly enables Dr. Bosanquet to create a pleasing illusion of Platonic support, but the point with which we are concerned is not whether an apparent tautology ever actually conveys new information, but whether a useful purpose is served by Dr. Bosanquet's special treatment of cause and ground.

1. In Dr. Bosanquet's conception of methodology, as expressed in his third paragraph, I find little with which to disagree. But what precisely is the meaning of his unnecessarily emphatic and repeated assertion that it is not the function of philosophy "to teach scientific men their business"? What is the business of a scientific man? If Dr. Bosanquet means to tell us that every worker has his own work, and that the philosopher is not required to enter the laboratory, or

¹ This JOURNAL, Vol. VII., No. 16, p. 438.

² On this point it is as well to give some brief explanation. My own position is that of one who approaches philosophy from the scientific side, with decided views of my own, which I am endeavoring, in every possible way, to put before the philosophical world. With regard to the controversies that divide the philosophical world, I usually find, not having myself passed through the philosophical mill, that they concern matters which are to me of secondary importance, or of which I have very imperfect knowledge. My principal ground of sympathy with what is called pragmatism is the demand that philosophy should have a real practical bearing on science and on every-day life.

to inform the chemist and the physicist how to carry out an experiment, surely that is only a truism. But if he means that the scientist and the philosopher each inhabits a universe of his own, that they deal with entirely distinct series of problems, that their spheres never meet, that their problems are in no way interrelated, that controversy, cooperation, or discussion between them is impossible or out of place, the falsity of the statement is equally apparent.

The point of my essay, of which a practical example has just been published,³ is that, when the philosopher undertakes to investigate the principles of scientific method, the investigation should be one which the scientist should not be able to ignore. Let me illustrate my meaning by a simple analogy. It is clearly and obviously not the function of the science of theoretical mechanics to teach the mechanical engineer his business. The mathematical mechanical theorist investigates the principles which underlie the complexities of all types of machinery. He does not attempt to tell the working engineer how to build a bridge. Yet it will be universally admitted that, if the working engineer is in no way more competent to design a bridge by reason of his study of mechanics, there must be something seriously wrong with theoretical mechanics. Similarly, we are entitled to assume that if, as appears to be the case, the study of the philosophical analysis of scientific method in no way fits the scientist to deal more adequately with the problems that are presented to him, there is good *prima facie* evidence that the currently accepted principles of methodology are erroneous or inadequate.

2. That this criticism is applicable to the current metaphysical⁴ treatment of cause and effect, most explicitly stated by Dr. Bosanquet, no one, I think, will deny. Nor am I able to see that either his very interesting explanation, or his imposing array of authority, necessitates the withdrawal of what I have said.

As I stated in the passage which Dr. Bosanquet criticizes, there is a sense in which we can not fully explain anything until we have explained everything: "No section of phenomena is in reality isolated, but all take their place in the greater cosmic unity." On this plane it is clearly illegitimate to speak of particular causes and effects, in that every phenomenon is in some respects unique, and in that everything is in some way connected with everything else. This is clearly

³ This JOURNAL, Vol. VII., No. 18, p. 481.

⁴ I substitute the term *metaphysical* for *intellectualistic*, which latter term Dr. Bosanquet thinks inapplicable to his logic. I used the term, in default of a better, to express my opinion that his treatment shows a tendency to too great abstraction.

Professor Clifford's meaning⁵ in the passage to which Dr. Bosanquet refers, and *if* it is all that Dr. Bosanquet means, he is open to the taunt, sometimes levelled at philosophers, of telling us what everyone knows in language which no one can understand. As I stated before, "the metaphysical unity is an assumption which antedates the whole investigation."

To do justice to Dr. Bosanquet, he does, in reality, mean more than this, and it is because he means more that I cited his treatment of cause and effect as an example of the deficiencies of the current methodology. For the special interest and value of the conception of cause and effect (though not necessarily of all descriptive science) is that, notwithstanding the metaphysical uniqueness of every phenomenon, and the metaphysical unity of the whole universe, certain events 'can, in fact, be repeated. The interest lies in the repetition not in the uniqueness. And it was because of the recognition of this that the treatment of Mill was superior to that of his successors. On this plane you certainly do, as Mill⁶ clearly pointed out, have to reckon with "plurality of causes," and you do, in many cases, indeed usually, find the cause clearly and obviously preceding the effect in time. The horse moves before the cart, if only by a minute fraction of a second. The point of my criticism was that, if the philosopher undertakes to write a philosophy of cause, he must start by showing the utility and the applicability of the conception, and by tracing its development in the various sciences. From this standpoint, Dr. Bosanquet's explicit statement that "he does not in the least imply that men of science ought to use other ideas than they do use at particular points in their work," is a distinct step in advance, as is also his admission that in chemistry the concept is "fully in place." When the philosopher has accomplished this preliminary, he should then show that the contradiction between the popular and scientific conception of cause and effect, and the metaphysical unity, the assumption of which underlies all scientific investigation, is only apparent. Now the empirical investigation of the idea of cause in the various sciences, or, in other words, the putting of "methods, processes, ideas,

⁵ With the best will in the world, I am unable to see the exact relevance of Dr. Bosanquet's reference to the "descriptive" movement in modern science. This development, if regarded as a metaphysical theory, I will say in passing, I believe to be mistaken, and I have in a previous article pointed out some of the errors of one of its most prominent representatives (see *Mind*, January, 1910, particularly p. 52), but with this, as with other matters, I should prefer to deal, if at all, explicitly. Here I would merely remark that a totally different metaphysical theory, which dispenses with the idea of cause for the purposes of practical science, is hardly a support to Dr. Bosanquet's expressed desire to put the idea in its place.

⁶ "Logic," Vol. I., p. 504.

in their place" is the element that I miss in his logic and in that of others of his school. My incidental criticism, to which I still adhere, is that while it "maintains its relation to the metaphysics from which it has been obtained, it has lost its connection with science." I desire to add, however, that the (admissions and) explanations to be found in Dr. Bosanquet's discussion, if they are more fully developed in subsequent work, will go some way towards remedying the deficiency.

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CAUSE AND GROUND. A REJOINDER

MR. SHELTON has kindly shown me his paper, and suggested that I should make an addendum. I fear it would be difficult for us to come to an agreement; for Mr. Shelton, as I judge from his foot-note 2, approaches philosophy rather from the outside, and demands that its treatment of its material shall be adapted to his questions. And I think it very likely that it will not be able to satisfy him, even if, as I believe, its treatment and material are fuller than he has trained himself to recognize. Offering more than is easily grasped causes misapprehension, as well as offering too little.

The question is, he says, whether such a treatment of causation as mine serves a useful purpose. Well, what is a useful purpose? Mine, in this case, is to satisfy a great human interest by helping to clear up the nature of knowledge. His, I fear, is to subserve the progress of natural sciences. I see nothing more useful in the latter of these than in the former. I do not think Mr. Shelton would say "useful = conducive to 'practical' interests." If he did, we should have to drop our discussion till we could talk out pragmatism. I did think he had leanings that way because of his demand for practical science from a branch of philosophy, and that was why I held pragmatism relevant.

But he may take me on the true ground of philosophy, and say that I *don't* help to clear up the nature of knowledge. Now I think that he really has not quite seen how entirely relevant my argument was. For he supposes that my references to tautology, and to the descriptive view of science, and to what he thinks "a totally different metaphysical doctrine," the doctrine of ground, are irrelevant. But here, I submit, he has not quite got inside his subject. For the point lies in the unavoidable transformation of the conception of "cause and effect" according to the phase of common sense or of science with which we may be dealing. And all the points I referred to lie

well within the catena of meanings which must be thus constructed—that is to say, the actual significations of cause and effect, or the corresponding ideas (*e. g.*, in geometry, where cause and effect can not be used at all), as they are employed every day in the practise of the sciences. There is no question of the metaphysical unity of the universe or any heterogeneous conception. The phases described are the actual practise of science, concealed from the common-sense public by bad popular tradition.

Let us test the matter by the importance to be assigned to repetition. I said that the important thing for science was reference to a ground, *i. e.*, systematic determination. Mr. Shelton says it is repetition. This, in my view, is just the popular fallacy that induction lies in generalization from one or a few cases to many. It is wholly opposed to the practise of science and the theory of the best logicians. Take the fact that water boils at 212° Fahr. at sea level. After one strict experiment, the repetition of this fact is absolutely without scientific interest. The interest lies in the further development of the facts and theory of barometric pressure or the volatilization of fluids. In such a development cause *ipso facto* passes into ground. We no longer speak of things and events, but of laws and systems of conditions.

All I have done is to interpret the inductive theory of cause and the real practise of science. This, I submit, is more convenient, as well as nearer truth, than to work with a conception like cause which changes in your hands at every step in scientific progress. This is clearly what Clifford meant, and it is the whole tendency of the science of biology, as it approaches, on the one hand, the organic, and, on the other, the mathematical ideal. The category of cause can not be used in either of these types of knowledge. It belongs to the level of common sense and elementary observation.

It is very disagreeable to me to seem to defend the merits of my own "Logic." But really I am speaking here of the whole tendency of modern logical theory. Of course my own book is full of defects. Still, it has the outline of the doctrine which is the *a, b, c* of the modern theory of knowledge—that the sciences create their own methods for their own purposes, but yet these methods are mere working hypotheses, good in so far as they work, but differing greatly in their claim to anything like truth. There is no "admission" nor a step in advance in this doctrine. It is the very *raison d'être* of logical theory.¹

BERNARD BOSANQUET.

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¹ Any one interested in the detail of the theory of causation would do well to refer to Mr. Joseph's "Introduction to Logic," Clarendon Press.

POSTSCRIPT

IN order to avoid drawing Dr. Bosanquet into further controversy, I add only the following points of explanation:

1. Dr. Bosanquet, I am sure, will do me the justice to note that I have at no time expressed an opinion concerning the content of philosophy. My essay refers only to methodology.

2. I fully agree with him that to clear up the notion of knowledge is a useful purpose and it is on the philosophical ground that I am meeting him.

3. I do not assert that repetition is *the* important thing for *science*, but merely that it is an essential element of the concept of cause and effect.

4. The words "admissions and" which I have placed in brackets, and which Dr. Bosanquet thinks inapplicable to his statement, can be omitted without weakening the force of the argument.

5. I did not mention Dr. Bosanquet on account of any special defects in his work, but because he is the most prominent exponent of the metaphysical treatment of the philosophy of cause.

With this explanation, I leave the matter to the judgment of others; but I desire to say in conclusion that, though I am unable to withdraw the substance of my criticism, I think, on looking once more through my essay, that one or two of the phrases might, with advantage, be modified. But no discourtesy was intended to a philosophical writer much more experienced than myself.

H. S. SHELTON.

 REVIEWS AND ABSTRACTS OF LITERATURE

Herders und Kants Aesthetik. GÜNTHER JACOBY. Leipzig. 1907. Pp. ix + 348. ✓

In an age when the historical viewpoint is regarded as important in the development of any subject, a book deserves attention that is able to reconstruct a prominent historical epoch with reference to the influences, meanings, and relative values embodied in it. The work's significance is multiplied if it brings to light ideas that are vital for our age, that can exercise a stimulating and controlling power over contemporary theorizing. Such a book lies before us.

The investigation is divided into three parts. Of these the first is a general historical introduction, of minor importance save to those whose chief interest is in historical facts and relations. The second is an exposition of Herder's completed esthetics in both its general principles and its application to the different arts. The third is a critical comparison of Herder and Kant. The book is well supplied with table of con-

tents, indices of subject-matter and persons, and references to the writings of Herder and Kant used. The author's main dependence for Parts II. and III. was upon Herder's "Kalligone" and Kant's "Kritik der Urteilkraft." His problem neglecting the personal grounds of Herder's polemic, was concerned with the difference between the two esthetics in method and content; and he estimates Kant's views by the standards embodied in Herder's writings, rather than the reverse, as has been the historical custom.

In order to estimate the present-day value of Herder's esthetics, we must give brief attention first to its fundamental principles and then to the definition and relations of esthetic experience expressed by his theory. For Herder the kernel of that experience is feeling, but it is sympathetic and directed to objects, and thus elevated above blind immediacy. The object is mediated by the esthetic concept, which is well distinguished from both practical and logical concepts: it is not concerned with personal interests and the part that things play therein, nor with abstract qualities and their quantitative relations; it is not emasculated, its emotional and vital factors have not been eliminated; its virtue is not abstract definition, but inner intuitive clearness, though this is conditioned by sensory, intellectual and emotional factors. It varies with the object and the observer's acquaintance therewith; it differs for the beautiful and the sublime in the prominence given to individual nature or general type. Evidently esthetic conception involves *Beseelung*, a kind of animism, vital imagination, or objective sympathy, which is not fanciful, but determined by the essential spiritual nature of the object. This esthetic *Beseelung* (cf. Lipps's *Einfühlung*) is viewed by Herder as more naïve and original than philosophical animism (though its admitted modification by science and culture seems incompatible with this view), therefore Herder's esthetics is to be regarded as the foundation of his epistemology rather than the converse.

Perfection is a central concept of Herder's esthetics. It is a relative and normative concept, predicating an object's approximation to the ideal and its place in a scale of values. Herder distinguished the subjective and objective types, *i. e.*, (1) the enhancement of mental functioning in the observer, ease and adequacy of the knowing process, of which pleasure is a sign, and (2) the perfection involved in the happy inner constitution of the object. Each involves an organic unity of the manifold. There is a mutual, significant connection of spiritual welfare and bodily perfection such that either becomes the symbol of the other. The world is viewed as containing a gradation of perfections from the minerals up to man, so there should be a gradation in the feeling attitudes of their sympathetic appreciation from the agreeable of the lower senses up to the sublime. The beautiful: the sublime:: lower perfection: higher. Herder rejects Kant's sharp division of the esthetic from the teleological and the perfect.

For Herder the sublime is more dynamic, more mediate than the beautiful; it contains a moment of wonder and awe, of pain and effort, later overcome. His views may be contrasted with those of Kant: his

criterion of the sublime is found in the consciousness of the observer, while Kant places it more in the nature of the object; for him the unpleasant is a transient moment, for Kant it is permanent; and he emphasizes the relativity of the sublime to the stage of evolution. For Herder the two types of sublimity are marked respectively by (1) organic complexity rather than bodily greatness, and (2) reference to natural *vs.* supernatural morality.

As to the definition and relations of the esthetic, Dr. Jacoby finds Kant's three categories inaccurate. (1) "Universality" and "necessity" are not satisfactorily defined and are finally found to apply not to the esthetic experience *per se*, but to the judgment about the nature of the object. (2) "Freedom from interest" refers to the constitution of the subject, not of the object; but the subject is over-individual and esthetic judgment and taste are *a priori*, independent of the nature of the object and of personal desire. Evidently the term "interest" is here given an arbitrary meaning. For this negative category Herder substitutes the positive one "sympathetic," which implies that the object, in its own constitution, independent of the subject, is the content of esthetic feeling. (3) For Kant's "purposiveness without purpose" Herder substitutes real "perfection," for non-conceptual apprehension he substitutes the conceptual mode which is discriminating in its evaluations on an objective basis. While Kant starts with the lower forms of beauty as typical, Herder starts with the higher, more complex forms which contain intellectual elements; but the reaction to the higher forms is really the simpler and the easier of explanation: sympathy, *Beseelung*, and discriminative conception are more evidently present in dramatic or musical appreciation than in the attitude to simple geometric designs. It is easier to explain the lower from the higher forms than conversely: therefore Kant stands for discontinuity of the higher and lower, Herder for continuity. In fact, while Herder emphasizes the continuity both between the various types of esthetic experience and between esthetic and extra-esthetic experience, Kant adopts the opposite attitude in both cases.

On the relation of the esthetic to the intellectual, a brief comparison of Kant and Herder will be in order. For Kant the essential factor in appreciation is imaginative activity; this mediates between sense and understanding, but is not conceptual; it is concerned only with the formal relations of the sense material, not with its meaning, and it does not refer to an object. Herder and Kant agree that in mere form appreciation there is an absence of explicit logical concepts and of ability to give reasons for one's enjoyment. But while Kant makes this non-conceptual immediacy central and all-important as the criterion and differentia of esthetic experience, Herder on the contrary assumes the gradation and continuity of experience before mentioned, and for him enjoyment without thought is the derived and simplified form of a clear knowledge of perfection.

We noticed above the importance to Herder of the esthetic concept which, while different in direct purpose and constitution from the logical concept, must be said to be a partly intellectual instrument. The norma-

tive nature of the esthetic implies the ideal supremacy of the intellect in appreciation. For Herder the esthetic appreciation of nature, involving *Beseelung*, is conditioned by a double knowledge: (a) of one's own inner life and expression, and (b) of the external constitution and conditions of existence of the object. Esthetic imagination and judgment are liable to error in particulars: *that* nature is a spiritual life is intuitively certain, but the *what* and *how* of this life are uncertain, *i. e.*, the special mode of conceiving it as a basis for esthetic sympathy depends on scientific theory. The danger of erroneous taste is well illustrated in the case of the ugly: as apparent ugliness may not be real ugliness, there arises the normative demand for comprehension as a means of purifying taste. Opposition may exist between approbation by the finer senses and disgust by the coarser, or *vice versa*. Past scientific acquisitions enter into esthetic enjoyment as conscious, immediate, intuitive, and instrumental factors; as knowledge is not their aim, theoretical valuation is absent and intellectual processes involve no disturbance. Here a pertinent question would be, how far the science and reflection absorbed in art or appreciation must be the product of the individual's own efforts, and how far the individual may have acquired the results of others' efforts by imitation, sympathy, and even esthetic appreciation.

In Herder's view esthetic experience implies the unity of the whole being of man, intellectual, moral, and esthetic; it brooks no unresolved contradiction between these, esthetic judgment agrees with logical and moral judgment. The sublime, and especially the morally sublime, is a feeling for the ideal, and is dynamic. In moral ugliness, the morally obnoxious becomes esthetically unpleasant; the standard common to both is the norm of spiritual perfection. Esthetics, ethics, and nature philosophy are all normative, their content is worth judgments. Taste and conduct share in the pursuit of perfection, which is conceived as the goal of nature. Perfection of both object and subject is an esthetic requisite, involving therefore the wise selection of a worthy object, accurate apprehension, the development of the human spirit, and dependence on the sanction of the reason. Truly, Herder stands for "Reason in Art."

It is already evident that esthetic experience implies education. Esthetic education gets its sanction (Jacoby, p. 140) first in the fact of the plasticity, variableness, and evolution of psychic dispositions, and second in the normative nature of appreciation, involving, as it does, objectivity and the possibility of erroneous taste. We have found beauty, the sublime, the perfect, and the ugly to be relative concepts: relative to each other, relative to a real world of nature and art, and relative to humanity, its history, interests, powers, and degree of culture. The validity of taste thus depends on a capacity developed through education, but this necessity of training taste in no way impugns the claims of esthetic experience to validity, any more than the like need for conscience renders all morality groundless and worthless. Herder maintains that *all* education should be an advance from lower (or false) to higher (or true) grades of the *sublimity reaction*; *i. e.*, all true education is at once esthetic and moral. The ideal of human culture and progress is found

in beauty and sublimity; but it is a spiritual and dynamic beauty: the functional value of the esthetic is never lost to sight.

A brief summary may enable the reader better to grasp the contrast between the positions of Kant and Herder on esthetics. We find in Kant the *apriori* method *vs.* the experiential method in Herder; the stress on form is opposed to stress on significance; judgment instead of feeling is the point of departure; an *apriori* subjectivity takes the place of the objectivity of experience; the point of view is absolutistic rather than normative; the disjunction of the various types of esthetic experience is emphasized rather than their continuity; there is isolation rather than functional connection of the esthetic experience with other phases of experience, or the connection remains a mechanical and external one rather than organic; appreciation is non-conceptual *vs.* conceptual, and disinterested rather than sympathetic. These generalizations hold in the main, though of course there are some exceptions, and some inconsistencies in the authors, as in the place they assign to intellectual factors, and again Herder's method of experience.

Space forbids a discussion of detailed criticisms many of which will occur to the reader. Herder's method is more artistic than logical, it is more intuitive than strictly inductive, ideas springing from his personal experience with little subjection to further tests. One may complain that he gives a mythological interpretation of the world, that there is too much of teleology and animism, which even though appropriate to esthetics is quite out of joint with science, and that therefore he forces appreciation and knowledge into a union in which there is no fitness and in which the latter loses its true character. Is there any genuine intellectual mediation involved in appreciation, and if so, is this provided for by Herder's esthetic concept? Again, what is the relation of subject and object in esthetic experience: are they merged in the immediate? or if distinguished, is the subject or the object to be regarded as the more fundamental? Herder seems to lend himself to each of these three views under different circumstances; no doubt to distinguish the attitudes of the appreciator and the philosopher would conduce to clearness. But along with his valuable suggestiveness, some defect of definiteness and consistency must naturally be admitted in him.

Finally the criticism, partly valid, will occur to many that the idea of continuity, whether between the phases of esthetic experience or between it and other phases of life, is developed by Herder at the expense of important distinctions. For instance, Jacoby's readers may not be able accurately to differentiate the beautiful, the ugly, the sublime, and the perfect, as Herder views them. This is certainly a defect; but one should not on that account overlook the importance of Herder's insistence that the phases of experience are in fact not wholly separable, that they have something in common, that they are organically connected and that one type shades over into another by fine gradations. The emphasis of continuity brings one nearer the more immediate experiences of life and their felt meanings than does the emphasis of sharp divisions. Herder's view at least has the merit of reminding us that the whole value and

reality, the essence of an experience, is not to be confused with its differentia, the distinguishing mark of a thing is not the thing itself.

Dr. Jacoby's work perhaps makes Herder out to be more systematic and consistent than he is, or at least than he is demonstrated to be. Thus it is natural that some important theoretical and logical problems should be suggested, but left undiscussed or unsolved. But perhaps, after all, Herder's artistic intuitions are of more value than much system. For this reason and because his viewpoint and results harmonize so well with some of the leading and congenial traits of contemporary philosophical esthetics, I feel that his work may be of more real moment to us than Kant's. Students in this field should therefore be grateful to Dr. Jacoby for this scholarly rehabilitation of Herder.

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Studies in Melody. W. VAN DYKE BINGHAM. *Psychological Review* Monograph, No. 50. Pp. 88.

This is a thesis submitted for the doctor's degree. A part of the work was done during the years of 1905-07 at the University of Chicago and the remainder during the years 1907-08 in the Harvard psychological laboratory. The author writes as an enthusiast. He possesses some musical talent and has had some training. His interests are, however, primarily psychological. He finds the point of departure for this work in Professor Stetson's investigations in the field of rhythm and a great portion of the work turns upon certain points in Professor Meyer's "Elements of a Psychological Theory of Melody." The thesis is divided into four parts. The first part deals theoretically with the melody problems. He discusses the three uses of the term melody. A melody is defined as "a succession of tones which are not only related, but which also constitute an esthetic unity, a whole." The problem is to discover how a series of discrete tonal stimuli can generate the experience of a melody unity. Pitch of tones is made the *sine qua non* of melodic feeling, but other factors, such as duration, intensity, and color, may greatly assist in cementing the unity. "How the *pitch* relations of a series of discrete musical sounds may operate to weld these sounds into the organic whole which we perceive as a melody—this is the core of the problem and to this primary phase of the subject our present investigations will be strictly limited." The second part is given over to an experimental study of melodic relationship and of melodic trend. Two problems are investigated. The first concerns the question whether the feeling of "relationship" that attaches to two tones, in a major third, for instance, belongs alone to tones that stand to one another as 4:5. The inquiry was started to test, first, Lipps's law that one of two tones that give the feeling of melodic relationship must be a pure power of 2, and, second, Meyer's law that tones giving the feeling of melodic relationship are related by ratios expressed by small numbers not greater than seven. The author used twelve reagents who were to judge whether intervals slightly smaller and slightly larger than the major third gave melodic feeling. "The char-

acteristic feeling of 'relationship' was nearly always still present when the interval had been increased (or diminished) by 32 cents." The relation disappeared with a change of 48 cents. This is explained by reference to the way in which perception takes place, every object is apperceived according to some norm already established.

The second problem treats the question whether, when one of two tones is a pure power of 2, we wish to hear this tone last. A series of ratios was given the reagents and they were requested to answer the question whether the melody did end or not. Some of the series contained pure powers of 2 and some different ratios. The pairs of tones were given in both ascending and descending order. In the summaries there are tendencies shown for powers of 2 as well as for descending intervals or falling inflection. But there is a great mass of doubtful cases or indifferent judgments. These suggest a third line of inquiry which relates to the phenomenon of "tonality." Some other tone than either of the pair is preferred as an end tone. The author proposes this law: "Two melodically 'related' tones tend to establish a tonality, and the melody is judged to end only when the final tone is one of the members of the tonic triad—preferably the tonic itself." In the experiments the tones of the diad were given and then a third tone was made to follow. The reagent gave his introspections regarding the trend or trends of the interval. The outcome is expressed thus: "So long as the given tonality was maintained, the trend of any interval, ascending or descending, was toward some members of the tonic chord, preferably the tonic itself." "By tonality is meant a group of mutually related tones, organized about a single tone, the tonic, as the center of relations. Subjectively a tonality is a set of expectations, a group of melodic possibilities." "The tonality consists in the attitude of which the image is merely the superficial manifestation." Several observers remarked upon certain motor adjustments, strains, and tensions, which were relieved when the melody seemed to them to possess "finality." This furnishes the suggestion for the investigation reported upon in the third part. This is a study of the effects of melodic stimuli upon muscular movement. Reagents were instructed to tap at the most natural rate with the forefinger. When a norm was fully established, they were asked to listen to a two-tone group and to observe its melodic character. The results show that listening has in general a depressing effect upon the rate of tapping while the tones are heard, and increases the rate where finality is felt after the tones cease to be heard. Retardation takes place when the interval is judged lacking in finality. The fourth part contains a sketch of a motor theory of rhythm, the basis of which is to be found in the theory of attention. A melody begins by upsetting some set of muscular tensions; it "includes the taking of a proper 'attitude,' the organization of a set of incipient responses," and ends finally "with the arrival of a phase of the complex ongoing activities in which the balanced tensions can merge into each other, etc." "Two or more tones are felt to be 'related' when there is community of organized response." "Unrelated pitches fall apart because each demands its own separate attentive act of adjustment." The acknowledged obliga-

tions to Professor Stetson are here apparent. The way in which the author makes his suggestion bring this new factor of human experience of melody into harmony with the general trend of psychological theories is to be most highly commended.

While one feels a certain lack of the feeling of "finality" on finishing the reading, yet there is something so inherently interesting about the book and so suggestive in the problems studied and the results attained that he must pronounce it a first-class piece of work. One could wish that the results might have been published sooner after the work was done or that the long interval between the experiments and the final publication might have been filled with other equally good experimental studies upon some of the problems hit upon. The suggestion of tonality as a complement to the Lipps-Meyer theory seems to be the best part. The author has shown himself free from prejudice in a field where empiricism, if not prejudice, plays a great rôle. He has nowhere forced his facts to fit hypotheses. It may not be a disparagement of a good piece of work to say that a wider range of observers should have been found and experimented upon, as the author suggests the great influence which habituation has upon melodic feeling.

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Stoic and Epicurean. R. D. HICKS. New York: Charles Scribner's Sons. 1910. Pp. xix + 412.

It is not easy to resume a résumé, and this book is a sober and compact résumé in untechnical language of the history of four or five hundred years of ancient philosophy. The difficulty is enhanced for both the author and the reviewer by what is apparently the publisher's policy of excluding Greek. It is doubtless possible to obtain a considerable insight into the history of ancient philosophy through translations only. But a very little Greek is a great aid, and the use of the Greek originals of even twenty or thirty technical terms immensely facilitates the exposition of either the Aristotelian or the post-Aristotelian systems. If such terms were confined to foot-notes, they would add greatly to the value of the book for students without seriously offending the sensibilities of the general reader.

Historical study can not escape the illusions of abstraction and personification. The capitalized abstractions Platonism, Stoicism, Medievalism, Renaissance, Reformation, Enlightenment, compel us to conceive of ages, tendencies, and movements as single entities—as in a sense they are. Mr. Hicks distinguishes the teachings of the earlier and later Stoics as sharply as the plan of his book allows, and if I belabor the point it is not in censure of him, but because our estimate of the abstraction Stoicism depends upon it. Stoicism is the accidental name of a school, or perhaps rather a terminology and a literature of philosophy, which dominated the Græco-Roman world during the five hundred years between Aristotle and the neo-Platonic revival. Big as it bulked in the centuries of its vogue,

there is a point of view from which it is a mere episode or temporary fashion of speech of no lasting significance for the human spirit in comparison with the abiding suggestiveness of Plato and Aristotle.

The literature of the first three centuries of Stoicism survives only in fragments which scholars have industriously collected, and in Cleanthes's pantheistic hymn to Zeus, which Mr. Hicks gives, not in Pater's clever adaptation as an Hebraic psalm, but in the uninspired rhymed translation of the late Dr. James Adam. From the fragments of this early literature and the accounts of the systems given in Cicero and Plutarch, it seems probable that, apart from a certain mood and temper in the acceptance of life, the originality of the founders of Stoicism was, as Cicero hints, of the kind which George Eliot says "mistakes its ignorance for a creative dissidence." Stoic hylozoism and pantheism is implicit in the pre-Socratics and in Plato's "Timæus." The Stoic ethics is the idealizing and ascetic mood of Plato's "Gorgias," "Phædo," and "Republic," overstrained by pedantry and then relaxed by casuistry. The Stoic *theodicée* and teleology, like that of Leibnitz and Malebranche, is anticipated in Plato's "Laws." The Stoic logic and psychology add little to Aristotle but refinements of terminology and superfluous distinctions. The Stoic physics is a mixture of Heraclitus and Aristotle that has little significance for the history of science. Our estimate of the value of this early Stoicism will depend largely on the extent of our interest in system-building and coining of terminology. Two things only give Stoicism its hold on the modern imagination: First, its association with the noblest type of Roman character in the lives of the Stoic worthies of the later Roman republic and early empire—a Cato, a Thræsea, a Musonius; and, second, the extant later secondary Platonizing Stoic literature of edification in the writings of Seneca, Epictetus, and Marcus Aurelius, of whom Mr. Hicks's fourth chapter, on "The Teaching of the Later Stoics," gives an excellent account.

To Epicurus Mr. Hicks devotes three chapters. The first, "Epicurus and Hedonism," consists largely of translations from the philosophic letters of Epicurus, preserved in the tenth book of Diogenes Laertius, and of the "Golden Maxims," concluding with interesting parallels between Epicurus and the two great modern hedonistic utilitarians, Jeremy Bentham and Herbert Spencer. The second chapter, on "The Atomic Theory," includes the little Mr. Hicks has to say of the Epicurean psychology and the poem of Lucretius on "The Nature of Things." The statement on p. 205, that "the mechanical explanation of nature was abandoned by Plato and Aristotle . . . in favor of a teleological system," is the conventional view from Bacon down, but is misleading, for Plato certainly, and perhaps for Aristotle. They superposed teleological on mechanical explanation, but Plato never and Aristotle rarely substituted the one for the other. They were ready to admit all mechanical explanations available and to encourage the quest for more; they merely refused to accept atomistic materialism as the ultimate ontology. The notion that Platonism was an anti-scientific school of thinking, as compared, for example, with Epicurean-

ism, is a superstition of the orators of modern science derived from Bacon and Macaulay. In attempting to translate and interpret Diogenes Laertius, X., 58 ff., on the *minimum vicibile*, Mr. Hicks shows great courage, justified by substantial success. His defense of the declination of the atoms against Guyau I do not understand. The swerving of the atoms is distinctly postulated by Lucretius, both to account for their coming in contact and also to make possible the freedom of the will. As a scientific speculation, it is precisely on a par with Professor James's suggestion that free will might without exercising force or exposing itself to detection suspend decision long enough to enable our better nature to get in its work. But Mr. Hicks insists that, "Great as is the departure from the true doctrine of mechanical necessity, . . . this is a very different thing from calling in spontaneity as a principle in nature" (p. 261).

The chapter on "The Epicurean Religion" assumes that the Epicureans seriously believed in their fainéant gods, and that Democritus also believed in the real existence of the "dæmons" whose atomic images present themselves to the mind in dreams. Supplementary chapters sketch the history of ancient scepticism and eclecticism. Thus the work as a whole fills the gap between Aristotle and Neo-Platonism and well fulfills its function in the series of which it is a part. A useful select bibliography is appended.

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JOURNALS AND NEW BOOKS

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. XVI. Band, Heft 3. August, 1910. *The Psychology of Belief* (pp. 294-309): J. LINDSAY. — The psychology of belief as presented by Spinoza, Hume, and, in our time, by James, Rickert, Wundt, and others, prompts the conclusion that belief is not a mere reality-feeling, but the asserting of what is on the logical side a judgment, a determination. The psychology of belief is the psychology of human power, life. *Henri Bergsons metaphysische Grundanschauung* (pp. 310-320): H. PRAGER. — Bergson in his highly interesting "Einführung in die Metaphysische" admits as possible only two attitudes toward the *absolute*: (1) the *relative, symbolic* where the object, I being *outside* of it, is viewed in relation, as it were, to a system of coordinates and is symbolized in an *image, concept*; (2) the *intuitive* whereby I penetrate into the object *itself*, reaching its very essence as *unity*. Thus, the metaphysics rests on psychology, their respective places are obvious: the latter is *analytic*, the former a most *interested* science whose center is the *essence* of the individual. From intuition one can reach to analysis, but never *vice versa*. *Manifestly, metaphysics is no system, no abstraction, but intuition of the essence of the inner duration.* *Die Seele* (pp. 321-331): F. L. DENCKMANN. — Man is a person, for in his cells a soul is seated that is not subject to mutation (though conditioned thereby), and that

continues after the decomposition of the cell-life. Man's individuality is mutable and is seated in the cell aggregates of the brain with something like 18 individual faculties. *Politik als Wissenschaft und Philosophie* (pp. 332-348): K. PESCHKE. - Politics is a science of values with the individual, the appraiser, for its center. The *state compelling* the individual's acts must justify its end. No Rechtsphilosophie, no philosophy in general, but politics alone must answer *what is good* and *what is evil*. Obviously, the will of every one to live, this axiomatic value, is the foundation of *social* self-preservation, and politics must furnish the ideal of social coexistence. *Die Wahrscheinlichkeitsrechnung in Hartmanns Philosophie des Unbewussten* (pp. 348-354): A. HARTUNG. - Hartmann's computations are in principle erroneous and when corrected lead to results opposite to his own. *Die Entwicklung des Menschen* (pp. 355-363): V. SCHLEGEL. - A unified world view is useful to man regarding both his knowledge and conduct; hence the value of the theory of evolution that makes man spring from some primordial cell form and develop by differentiation into individuals and by integration into higher forms of society. *Die Emanzipierung von der Folgestrenge* (pp. 364-379): E. KIESERITZKY. - Logical stringency is but a farce; the necessary foundation of logical reasoning (in generalizations as well as in the historical narrative) is our conscience, hence the logic of motives should precede and supersede that of premises. The kinship of this view with pragmatism is apparent, but does not minimize the former's value. *Ueber den Begriff der Wahrheit der Erkenntnis* (pp. 380-394): A. MÜLLER. - "Adæquatis rei et intellectus" is only then a correct formula of truth when being is made to imply the relation: subject-cognizable reality. Obviously, truth as but the approximate synthesis of subjective and objective elements leads asymptotically to the ideal of agreement between thinking and being. *Die gesehene und die ungesehene Welt* (pp. 395-398): T. KEHR. - The object as given to consciousness (= as seen) is tridimensional: Quality (= substance), quantity, and form (arrangement). Now, does the object coincide with its picture (= seen object)? Yes, as to quality, but not as to quantity and form, in which objects of various qualities may be alike. *Die Philosophie in Finnland* (pp. 399-405): W. EIGENBRODT. - Historical survey continued. *Bericht über die deutsche ästhetische Literatur aus den Jahren 1905-09* (pp. 409-426): ANNA TUMARKINS. *Die neuesten Erscheinungen*.

REVUE DE METAPHYSIQUE ET DE MORALE. September, 1910. *Vues sur les problèmes de la philosophie* (pp. 581-613): G. SOREL. - An interpretation of the significance of diverse philosophies, ancient and modern. *Proudhon sociologue* (pp. 614-648): C. BOUGLÉ. - Detailed account of the different tendencies in the author's sociological views. *Correspondance inédite de Ch. Renouvier et de Ch. Secrétan (fin)* (pp. 648-670): Conclusion of the personal and scientific correspondence that has been appearing in this journal. *Études critiques*. H. COHEN, *La logique de la connaissance pure*: WALTER KINKEL. *Directions des études éthiques dans l'Italie contemporaine*: A. LÉVI. *Questions pratiques*. *Le procès de la Démocratie (suite et fin)*: GUY-GRAND. *Supplément*.

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NOTES AND NEWS

THE tenacity of the argument from design is illustrated by the recent book by Alfred Russel Wallace, "The World of Life." The sub-title of the volume is "A Manifestation of Creative Power, Directive Mind, and Ultimate Purpose," and the author's object is, if possible, to discover proofs of this in nature. With this in view he begins with a detailed account of the distribution of plants and animals in the world, and as shown in past ages by the geological record. He believes that the surface changes of the earth form the motive power of organic evolution, the guiding force of which is natural selection acting by means of the laws of heredity, variation, and increase, and the consequent survival of the fittest. But Dr. Wallace's convictions enable him to carry the analysis a step further back: "If then all life development—all organic forces—are due to mind action, we must postulate not only forces, but guidance; not only such self-acting agencies as are involved in natural selection and adaptation through survival of the fittest, but that far higher mentality which foresees all possible results of the constitution of our cosmos." Again, referring to the adaptations between life and the physical laws of the solar system which render life possible, and after expressing his belief that on no other planet than the earth can the development of organic life take place, he says: "These afford, in my opinion, an exceedingly powerful argument for an over-ruling Mind, which so ordered the forces at work in the material universe as to render the almost infinitely im-

probable sequence of events to which I have called attention an actual reality."—*The Athenæum*.

At the meeting of the Aristotelian Society on December 5 Mr. Bernard Bosanquet read a paper on "A Defect in the Customary Logical Formulation of Inductive Reasoning." The point of departure for the argument was a sentence from M. Bergson: "L'intelligence a pour fonction essentielle de lier le même au même, et il n'y a entièrement adaptable aux cadres de l'intelligence que les faits qui se repètent." Contending that this account of the intelligence is false, and pointing out its origin in M. Tarde and the imitation and repetition theorists, the writer nevertheless admitted and maintained that the customary account of induction does much to support it, by restricting itself to eliminative tests founded on the abstract principle of identity, much as M. Bergson states it. The true mainspring of inductive thought, he further contended, is the power of a universal, or of a continuity of principle in new, but kindred matter, binding different to different. This point tends to drop out of logical theory, because it can not be reduced to formal method. The writer laid stress on an illustration drawn from the reciprocal modification of the principles of preformation and epigenesis in recent embryology (Driesch and Jenkinson). He further pointed out that the opinion he supports is opposed to the purely exhaustive doctrine of inductive proof and to a common conception of inductive generalization or universality, which really lies in the comprehension of a system of knowledge, and not in numbers of instances. This view of the goal of induction further affects the truth of partial truths, which are here treated as partially false, in harmony with a doctrine of Plato compared with an argument of Mr. F. H. Bradley.—*The Athenæum*.

THE American Psychological Association held its nineteenth annual meeting at Minneapolis on Wednesday, Thursday, and Friday, December 28, 29, and 30, 1910, in affiliation with the Western Philosophical Association and the American Association for the Advancement of Science. The program occupied two days and a half. The department of philosophy and psychology of the University of Minnesota entertained the members of the association at two smokers given jointly to the two associations under its care, one after the address of the president of the Western Philosophical Association, Professor E. B. McGilvary, of the University of Wisconsin, and the other after the address of the president of the American Psychological Association, Professor Walter B. Pillsbury, of the University of Michigan, on "The Place of Movement in Consciousness." At the business meeting on Friday morning the following officers were elected: president, Professor C. E. Seashore, of the University of Iowa; secretary-treasurer, Professor W. V. D. Bingham, of Dartmouth College; members of the council, to serve for three years, Professor A. H. Pierce, of Smith College, and Professor H. C. Warren, of Princeton University. It was voted to meet next year in Washington, unless unforeseen circumstances arise to make this inadvisable.

THE first number has appeared of the series of Italian philosophical

classics, the publication of which was noted at the meeting of the Italian Philosophical Society held at Rome in 1909. It is Volume I. of the works of Bernardino Telesio; this writer's other works will fill probably three more volumes which are expected to appear at intervals of about six months. The editor of the series, Felice Tocco, calls attention to the absence of satisfactory texts of the Italian philosophy of the Renaissance, and to the importance of the present undertaking. The volumes are offered at the rate of L. 5.50 each, and L. 7.50 for binding in parchment. If the undertaking is justified by its support, the works of Telesio will be followed by those of Campanella. The present volume is an excellent piece of book-making, and the appearance of it suggests an inquiry as to the fate of a similar enterprise in behalf of early American philosophy which has been undertaken by our own Philosophical Association.

IN the *Revue générale des sciences* for October 15 and 30 Professor Marinesco, of the University of Bucharest, has given an interesting summary of recent investigations upon the anatomical localization of the human cerebral cortex, and more especially of the distinctive cytological characters of each of the multitude of areas into which the pallium of the brain can now be subdivided. His descriptions are elucidated by a series of twenty-seven drawings exhibiting a wealth of intricate detail. The articles are essentially a digest of the work accomplished by others, and especially of the classical researches of Oskar and Cecilie Vogt and Karl Brodmann. Although Professor Marinesco's citations of the results and the opinions expressed by other anatomists are not always exact, on the whole his summary will be useful to those who are unable to find time to read the voluminous literature upon which it is based.—*Nature*.

THE meeting of the New York Branch of the American Psychological Association will take place on Friday and Saturday, February 3 and 4. The scientific sessions will be held in the psychological laboratory of Columbia University, and a dinner and smoker will be held on Friday evening at the Faculty Club of the University. In view of the fact that many eastern members of the association were unable to attend the national meeting, it seems possible that the winter meeting of the New York Branch may appeal to a wider constituency than usual. All members, and others interested, are cordially invited to attend this meeting. Among those who have signified their intention of being present from a considerable distance are Professors Angell, Jastrow, Judd, and Pillsbury. It is probable that some papers will be presented in memory of William James.

AT the Minneapolis meeting of the American Association for the Advancement of Science, Dr. Charles E. Bessey, professor of botany and dean at the University of Nebraska, was elected president for the meeting to be held at Washington, beginning on December 27, 1911. It is planned to hold the meeting of 1912 at Cleveland. The meeting of the association and of the affiliated societies at Minneapolis was in every way successful. The registration of members of the association was 663, which represents an attendance of scientific men about twice as large.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

RUSSELL'S PHILOSOPHICAL ESSAYS.¹ I

MR. RUSSELL'S essays, while comparatively popular in style, give a more rounded picture of the system he represents than do any of his previous writings, or any of those yet published by Mr. G. E. Moore. They touch on a variety of subjects: the sublimity of ideal science, the formal nature of truth, and the formal meaning of good; and they criticize some looser ways of thinking on these subjects, such as pragmatic logic and naturalistic ethics. In one of the papers we also learn what sort of religion might be expected to crown this logical puritanism. It would consist of a Promethean defiance of nature and all her ways, concentrating our satisfaction, in the Stoic manner, upon a certain internal freedom, which can not be taken away from any being endowed with reason—the freedom to frame his own ideals and to worship them.

Of this philosophy I should be inclined to say what Mr. Russell himself has said of the philosophy of Leibnitz, that it is at its best in those subjects which are most remote from human life. It is refreshing, and on the whole reassuring, after the confused, melodramatic ways of philosophizing to which transcendentalism and pragmatism have accustomed us, to breathe again the crisp air of scholastic common sense. It is good for us to be held down, as the Platonic Socrates would have held us, to saying what we really believe, and sticking to what we say. We seem to regain our intellectual birth-right when we are allowed, even in philosophy, to declare our genuine intent, instead of begging some kind psychologist to investigate our "meaning" for us, or even waiting for the flux of events to endow us with what "meaning" it will. It is also instructive to have the ethical attitude purified of all that is not ethical and turned explicitly into what in its moral capacity it essentially is: a groundless pronouncement upon the better and the worse. But here a certain one-sidedness begins to make itself felt in Mr. Rus-

¹ "Philosophical Essays," by Bertrand Russell, M.A., F.R.S., late fellow of Trinity College, Cambridge, Longmans, Green, & Co., 1910.

sell's views. The ethical attitude doubtless has no *ethical* ground, but that fact does not prevent it from having a *natural* ground; and the observer of the animate creation need not have much difficulty in seeing what that natural ground is. Mr. Russell, however, refuses to look also in that direction. He insists, rightly enough, that good is predicated categorically by the conscience; he will not remember that all life is not merely moral bias, and that, in the very act of recognizing excellence and pursuing it, we may glance back over our shoulder and perceive how our moral bias is conditioned, and what basis it has in the physical order of things. This backward look, when the hand is on the plough, may indeed confuse our ethical self-expression, both in theory and in practise; and I am the last to deny the need of insisting, in ethics, on ethical judgments in all their purity and dogmatic sincerity. Such insistence, if we had heard more of it in our youth, might have saved many of us from chronic entanglements; and there is nothing, next to Plato, which ought to be more recommended to the young philosopher than the teachings of Messrs. Russell and Moore, if he wishes to be a moralist and a logician, and not merely to seem one. Yet this salutary doctrine, though correct, is inadequate. It is a monocular philosophy, seeing outlines clear, but missing the solid bulk and perspective of things. We need binocular vision to quicken the whole mind and yield a full image of reality. Ethics should be controlled by a physics that perceives the material ground and the relative status of whatever is moral. Otherwise ethics itself tends to grow narrow, strident, and fanatical; as may be observed in asceticism and puritanism, or, for the matter of that, in Mr. Moore's uncivilized doctrine of retributive punishment, or in Mr. Russell's intolerance of selfishness and patriotism, and in his refusal to entertain any pious reverence for the nature of things. The quality of wisdom, like that of mercy, is not strained. To choose, to love and hate, to have a moral life, is inevitable and legitimate in the part; but it is the function of the part as part, and we must keep it in its place if we wish to view the whole in its true proportions. Even to express justly the aim of our own life we need to retain a constant sympathy with what is animal and fundamental in it, else we shall give a false place, and too loud an emphasis, to our definitions of the ideal. However, it would be much worse not to reach the ideal at all, or to confuse it for want of courage and sincerity in uttering our true mind; and it is in uttering our true mind that Mr. Russell's essays can help us, even if our true mind should not always coincide with his.

I. THE STUDY OF ESSENCE

“The solution of the difficulties which formerly surrounded the mathematical infinite is probably,” says Mr. Russell,² “the greatest achievement of which our own age has to boast. . . . It was assumed as self-evident, until Cantor and Dedekind established the opposite, that if, from any collection of things, some were taken away, the number of things left must always be less than the original number of things. This assumption, as a matter of fact, holds only of finite collections; and the rejection of it, where the infinite is concerned, has been shown to remove all the difficulties that hitherto baffled human reason in this matter.” And he adds in another place:³ “To reconcile us, by the exhibition of its awful beauty, to the reign of Fate . . . is the task of tragedy. But mathematics takes us still further from what is human, into the region of absolute necessity, to which not only the actual world, but every possible world, must conform; and even here it builds a habitation, or rather finds a habitation eternally standing, where our ideals are fully satisfied and our best hopes are not thwarted. It is only where we thoroughly understand the entire independence of ourselves, which belongs to this world that reason finds, that we can adequately realize the profound importance of its beauty.”

Mathematics seems to have a value for Mr. Russell akin to that of religion. It affords a sanctuary to which to flee from the world, a heaven suffused with a serene radiance and full of a peculiar sweetness and consolation. “Real life,” he writes,⁴ “is to most men a long second-best, a perpetual compromise between the ideal and the possible; but the world of pure reason knows no compromise, no practical limitations, no barrier to the creative activity embodying in splendid edifices the passionate aspiration after the perfect from which all great work springs. Remote from human passions, remote even from the pitiful laws of nature, the generations have gradually created an ordered cosmos where pure thought can dwell as in its natural home, and where one, at least, of our nobler impulses can escape from the dreary exile of the actual world.” This study is one of “those elements in human life which merit a place in heaven.”⁵ “The true spirit of delight, the exaltation, the sense of being more than man, which is the touchstone of the highest excellence, is to be found in mathematics as surely as in poetry.”⁶

This enthusiastic language might have, I should think, an oppo-

² P. 77.

³ P. 82.

⁴ P. 74.

⁵ P. 73.

⁶ *Ibid.*

site effect upon some readers to that which Mr. Russell desires. It might make them suspect that the claim to know an absolute ideal necessity, so satisfying to one of our passionate impulses, might be prompted by the same conceit, and subject to the same illusion, as the claim to know absolute truth in religion. Beauty, when attributed to necessary relations between logical entities, casts a net of subjectivity over them; and at this net the omnivorous empiricist might be tempted to haul, until he fancied he had landed the whole miraculous draught of fishes. The fish, however, would have slipped through the meshes; and it would be only his own vital emotion, projected for a moment into the mathematical world, that he would be able to draw back and hug to his bosom. Eternal truth is as disconsolate as it is consoling, and as dreary as it is interesting: these moral values are, in fact, values which the activity of contemplating that sort of truth has for different minds; and it is no congruous homage offered to ideal necessity, but merely a private endearment, to call it beautiful or good. The case is not such as if we were dealing with existence. Existence is arbitrary; it is a questionable thing needing justification; and we, at least, can not justify it otherwise than by taking note of some affinity which it may show to human aspirations. Therefore our private endearments, when we call some existing thing good or beautiful, are not impertinent; they assign to this chance thing its only assignable excuse for being, namely, the service it may chance to render to the spirit. But ideal necessity or, what is the same thing, essential possibility has its excuse for being in itself, since it is not contingent or questionable at all. The affinity which the human mind may develop to certain provinces of essence is adventitious to those essences, and hardly to be mentioned in their presence. It is something the mind has acquired, and may lose. It is an incident in the life of reason, and no inherent characteristic of eternal necessity.

The realm of essence contains the infinite multitude of Leibnitz's possible worlds, many of these worlds being very small and simple, and consisting merely of what might be presented in some isolated moment of feeling. If any such feeling, however, or its object, never in fact occurs, the essence that it would have presented if it had occurred remains possible merely; so that nothing can ever exist in nature or for consciousness which has not a prior and independent locus in the realm of essence. When a man lights upon a thought or is interested in tracing a relation, he does not introduce those objects into the realm of essence, but merely selects them from the plenitude of what lies there eternally. The ground of this selection lies, of course, in his human nature and circumstances; and the satisfaction he may find in so exercising his mind will be a consequence of his mental disposition and of the animal instincts beneath.

Two and two would still make four if I were incapable of counting, or if I found it extremely painful to do so, or if I thought it naïve and pre-Kantian of these numbers not to combine in a more vital fashion, and make five. So also, if I happen to enjoy counting, or to find the constancy of numbers sublime, and the reversibility of the processes connecting them consoling, in contrast to the irrevocable flux of living things, all this is due to my idiosyncrasy. It is no part of the essence of numbers to be congenial to me; but it has perhaps become a part of my genius to have affinity to them.

And how, may I ask, has it become a part of my genius? Simply because nature, of which I am a part, and to which all my ideas must refer if they are to be relevant to my destiny, happens to have mathematical form. Nature had to have some form or other, if it was to exist at all; and whatever form it had happened to take would have had its prior place in the realm of essence, and its essential and logical relations there. That particular part of the realm of essence which nature chances to exemplify or to suggest, is the part that may be revealed to me, and that is the predestined focus of all my admirations. Essence as such has no power to reveal itself, or to take on existence; and the human mind has no power or interest to trace all essence. Even the few essences which it has come to know, it can not undertake to examine exhaustively; for there are many features nestling in them, and many relations radiating from them, which no one needs or cares to attend to. The implications which logicians and mathematicians actually observe in the terms they use are a small selection from all those that really obtain, even in their chosen field; so that, for instance, as Mr. Russell was telling us, it was only the other day that Cantor and Dedekind observed that although time continually eats up the days and years, the possible future always remains as long as it was before. This happens to be a fact interesting to mankind. Apart from the mathematical puzzles it may help to solve, it opens before existence a vista of perpetual youth, and the vital stress in us leaps up in recognition of its inmost ambition. Many other things are doubtless implied in infinity which, if we noticed them, would leave us quite cold; and still others, no doubt, are inapprehensible with our sort and degree of intellect. There is of course nothing in essence which an intellect postulated *ad hoc* would not be able to apprehend; but the kind of intellect we know of and possess is an expression of vital adjustments, and is tethered to nature.

That a few eternal essences, then, with a few of their necessary relations to one another, do actually appear to us, and do fascinate our attention and excite our wonder, is nothing paradoxical. This is merely what was bound to happen, if we became aware of anything

at all; for the essence embodied in anything is eternal and has necessary relations to some other essences. The air of presumption which there might seem to be in proclaiming that mathematics reveals what has to be true always and everywhere, vanishes when we remember that everything that is true of any essence is true of it always and everywhere. The most trivial truths of logic are as necessary and eternal as the most important; so that it is less of an achievement than it sounds when we say we have grasped a truth that is eternal and necessary. This fact will be more clearly recognized, perhaps, if we remember that the cogency of our ideal knowledge follows upon our intent in fixing its object. It hangs on a virtual definition, and explicates it. We can not oblige anybody or anything to reproduce the idea which we have chosen; but that idea will remain the idea it is whether forgotten or remembered, exemplified or not exemplified in things. To penetrate to the foundation of being is possible for us only because the foundation of being is distinguishable quality; were there no set of differing characteristics, one or more of which an existing thing might appropriate, existence would be altogether impossible. The realm of essence is merely the system or chaos of these fundamental possibilities, the catalogue of all exemplifiable natures; so that any experience whatsoever must tap the realm of essence, and throw the light of attention on one of its constituent forms. This is, if you will, a trivial achievement; what would be really a surprising feat, and hardly to be credited, would be that the human mind should grasp the *constitution of nature*; that is, should discover which is the particular essence, or the particular system of essences, which actual existence illustrates. In the matter of physics, truly, we are reduced to skimming the surface, since we have to start from our casual experiences, which form the most superficial stratum of nature, and the most unstable. Yet these casual experiences, while they leave us so much in the dark as to their natural basis and environment, necessarily reveal each its ideal object, its specific essence; and we need only arrest our attention upon it, and define it to ourselves, for an eternal possibility, and some of its intrinsic characters, to have been revealed to our thought.

Whatever, then, a man's mental and moral habit might be, it would perforce have affinity to some essence or other; his life would revolve about some congenial ideal object; he would find some sorts of form, some types of relation, more visible, beautiful, and satisfying than others. Mr. Russell happens to have a mathematical genius, and to find comfort in laying up his treasures in the mathematical heaven. It would be highly desirable that this temperament should be more common; but even if it were universal it would not reduce mathematical essence to a product of human attention, nor

raise the "beauty" of mathematics to part of its essence. I do not mean to suggest that Mr. Russell attempts to do the latter; he speaks in this book explicitly of the *value* of mathematical study, a point in ethics and not directly in logic; yet his moral philosophy (to which I hope to return in a later paper) is itself so much assimilated to logic that the distinction between the two becomes somewhat dubious; and as Mr. Russell will never succeed in convincing us that moral values are independent of life, he may, quite against his will, lead us to question the independence of essence, with that blind gregarious drift of all ideas, in this direction or in that, which is characteristic of human philosophizing.

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DISCUSSION

REALISM: A REPLY TO PROFESSOR DEWEY AND AN EXPOSITION¹

PROFESSOR DEWEY'S examination of the "Platform of Six Realists" in a recent number of this JOURNAL under the title "The Short Cut to Realism Examined" is certainly very welcome to the members of the group.² Criticism is a mode of cooperation which we gladly accept; for, if we are in error, we had rather know this than not, and are quite willing, indeed anxious, not only to amend our platform, if such error be demonstrated, but, finally, to find in some set of principles, either in those of our platform or in such others as criticism may show to be correct amendments or substitutes, a common standing-ground for an ever-widening circle of philosophers.

Professor Dewey makes his criticism from the standpoint of genesis. Now genesis and realism are not incompatible. If there is a real, existential genesis, just as if there is a real existential theistic God, or a real vital energy, etc., then these must be accepted. Only, the realist contends, the very same conditions on which one "thing," say a genesis, can be and is accepted as real, must be allowed to make it possible to accept other "things" as real also. Accordingly he finds that it is quite as possible that there should be *real* limits to genesis, that there should be some "things" which do not evolve—among these certain logical principles—and that these should

¹ This reply and exposition is published after discussion with the other members of the group and has received in general their approval.

² See this JOURNAL, Vol. VII., pp. 393 and 553.

have a real logical priority³ over the genesis either of knowledge or of things, or of the genetic account of this genesis, *as that there should be* a genesis either physical or mental. The realist would wish that Professor Dewey could do this too, for then, by realizing that there is nothing incompatible between the logical antecedence of logic over psychology and at least the partial psychological (historical) antecedence of the knowledge of genesis over the knowledge of logic, that further agreement would be reached which should be the final purpose of all discussion.

I shall reply to Professor Dewey in essentially the order in which he presents his several criticisms of our platform.

Criticism 1. The realist is attempting "to derive conclusions regarding existence from analysis and manipulation" of the theory of "external relations" (p. 554).

The charge is difficult to reply to as a whole because it contains diverse elements; in itself it is to be criticized. Thus it conjoins the terms "analysis" and "manipulation," and seemingly seeks to discredit the former by the unfortunate suggestion derived from the latter, especially if this means *mere* manipulation, as Professor Dewey intimates it does. Clearly, however, analysis stands as a perfectly valid method. But both analysis and manipulation are perfectly valid methods, especially when used together with other methods, for drawing conclusions about existence or anything else. Indeed how else than by such methods does Professor Dewey proceed in getting his own genetic philosophy? The realist is, then, as much opposed as Professor Dewey intimates he is to the method of deriving conclusions by *mere* analysis and manipulation—indeed this is one of the reasons why he opposes idealism. Not mere manipulation, but manipulation, analysis, observation, hypothesis, and confirmation form his methods. And that this is the case can be shown by stating what his actual procedure is in dealing with the theory of "external relations."

The realist finds that in logic there are the two theories of relations as "external" and "internal" respectively,⁴ and his attention

³ By logical priority there is meant that relation which subsists if *B* presupposes or implies *A*, but *A* does not imply *B*; *A* is then the logically prior, *B* the logically subsequent. For example, logic is logically prior to Euclidean geometry, objects, existent or subsistent, are to the knowledge of them, truth is to proof, the theory of "external relations" to the theory of "internal relations."

⁴ The theory of "external relations" can be found formulated in our platform as follows:

"In the proposition 'the term *a* is in the relation *R* to the term *c*,' *aR* in no degree constitutes *c*, nor does *Rc* constitute *a*, nor does *R* constitute either *a* or *c*." Also: "One identical term may stand in many relations; a term may change some of its relations to other terms without thereby changing all its

is especially directed to these by the fact that idealistic and phenomenalist theories are without exception constructed and arrived at by what amounts to a purely manipulative use of the theory of "internal relations." Now to this construction of a philosophical theory by mere manipulation of any concept or doctrine the realist is thoroughly opposed. But that to which he is especially opposed in this idealistic procedure is the arbitrary application of the "internal theory" to the cognitive relation; for he finds empirical grounds for holding not only that this theory does not apply to this particular relation and that it is self-contradictory, but also that the "external theory" does apply. In considering the cognitive relation, then, and in laying emphasis on the theory of "external relations" as applying to this, the realist is actuated by his desire to join issue with his opponent at that point where it can be joined most sharply. And that point is furnished by the opponent himself in his selection and emphasis of the cognitive relation as the pivotal philosophical point, and by his application to it of the "internal theory." Accordingly, although the realist finds empirical grounds against this emphasis, he too, in order to meet his opponent squarely on his own ground, considers the cognitive relation. He both joins issue with his opponent and proceeds empirically by asking which of the two theories, that of "external" or that of "internal relations," is involved in genuine knowing. And he finds that that theory which logically allows for the fact that in genuine knowledge the object known is not modified (falsified), constituted, or altered by the knowing, *i. e.*, the "external theory," is implied. He finds this theory of relations to be implied in certain specific cases of supposedly genuine knowledge, in such cases, *e. g.*, as the idealist's knowing of his own theory and in Professor Dewey's knowing of his own genetic account. If, now, the cognitive relation in certain specific cases of genuine knowledge implies the theory of "external relations," then, the realist generalizes, it is to be considered as valid for all instances of genuine knowledge until demonstration to the contrary is effected. And since at some point in every theory, even in a genetic theory, the genuineness of knowledge and what it implies (*viz.*, the "external theory") is assumed or granted, the realist has a fulcrum on which to meet squarely the adherent of opposed theories and force him to yield. Just as, then, other relations to those same or to other terms; what relations are changed by a given change of relation can not be deduced merely from the nature of either the terms involved or their relation."

The theory of "internal relations" can be found formulated and the arguments for it analyzed in my article on "The Logical Structure of Self-refuting Systems," *Philosophical Review*, Vol. XIX., No. 3.

the realist leaves it to empirical investigation to ascertain which theory of relations is valid for the cognitive relation, so the further question as to what other relations the "external theory" is valid for, he decides by the same method. Finding empirically that the "external theory" applies to or is valid for the cognitive relation (where there is genuine knowledge), the realist proceeds further by asking, "What follows?" And he finds that, among other things, realism follows; *i. e.*, it follows (1) that anything whatsoever can be found to be real—unmodified by the knowing; (2) that only by detailed empirical investigation can it be found what the real is, how manifold and diverse it is; and (3) that knowing itself need not be studied (epistemology) in order to have genuine knowing (in chemistry, physics, biology, etc.). But these consequences are found empirically to be facts. Therefore the deductions from our hypothesis are confirmed, and an empirical presumption in favor of the truth of that hypothesis created. This is the method, then, which the realist uses, and he may well insist that he is not proceeding merely manipulatively, as he is charged with, but just as empirically as our critic would have him.

Criticism 2. "There is a basic ambiguity between the application of the concept of 'external relations' to (I.) *terms* and (II.) *existences*." "Seemingly it refers to the relation which terms in a proposition hold to each other." "Is it, however, denotative or connotative in its scope?" If the latter "does it mean that the logical content of a term is not modified when it enters into a relation with some other logical content?" If it means this, then, in the case of the growth of knowledge, "it is obviously false," although for achieved knowledge it is to be admitted; for "there is a difference between knowing as an active process and knowledge as a finished result." "The realist ignores this and so achieves an easy victory."

Reply: No, the realist does not ignore this difference; indeed it can be shown that he formulates it more clearly and makes an even greater use of it than Professor Dewey himself. This the realist does by using the closely allied distinction, which modern analysis justifies, between judgments and propositions. Judgments are psychological entities, propositions are subsistents. Professor Dewey confuses these two. Using this distinction, the realist can readily solve the questions concerning the growth of knowledge, etc., which Professor Dewey puts to him. Thus, as concerns this particular question, the realist finds that it is not necessary to have completed knowledge in all particulars in order to have genuine knowledge in some particulars. Professor Dewey's own theory might conceivably be an instance of such completed genuine knowledge within a limited field, not to be further modified by similar knowledge in

other fields. Or his theory might be partly right and partly wrong. Making the valid distinction, then, between the judgments of discourse and propositions, it is to be admitted that the former with their constituents—call these concepts—may be and doubtless are somewhat in error and are modified and corrected as knowledge develops. But the only kind of modification which it is possible for such judgments to undergo is either their rejection as false *in toto* or their analysis into two parts, one of which is true, and the other false. Indeed, these two modifications are the only modifications which Professor Dewey's own theories, as a whole, or the judgments which constitute them, could undergo, and he himself would not, without a struggle, accept the first alternative. He would certainly insist that some parts of his theory, some propositions, some concepts, or some parts of these—say of the complex concept of genesis—are genuinely true. Such parts can be related and supplemented without thereby being modified, and it is such parts that the realist has in mind when he applies the theory of "external relations" to achieved knowledge. This theory, then, is quite compatible with the growth and change of knowledge.

But, just as other knowledge may grow and change, as explained above, so also may the knowledge of the "external theory" develop and change. It has done this and the realist hopes that it will continue to do so—stimulated by such criticism as Professor Dewey's. But, with certain accurate and precise formulations and applications already on hand, the assertion (p. 556) that the theory is unanalyzed is not justified or justifiable, faulty as such analysis may be. Indeed one has only to turn to a work like Russell's "Principles of Mathematics" to find such an analysis and formulation and application of the theory, although it must be admitted that these are not segregated, but are scattered here and there through that most interesting and valuable presentation of advanced logic.

Now it seems to the writer that Professor Dewey does not attribute sufficient importance to this modern logical analysis and its bearing on the questions at issue, *e. g.*, on his own leading concept, genesis. At least it is a fact that he employs certain words with a meaning which this analysis has shown good reasons for not accepting, and which the realist does not accept. Thus, for example, Professor Dewey distinguishes between terms and existences (p. 554) and defines a term as = a symbol. The realist proceeds otherwise. For him, words are symbols for terms, and terms are either existent or subsistent, simple or complex, things or concepts.

Now it is also one of the results of this modern analysis not only that it makes it possible to admit change—which, of course, must be done—but that it shows (in mathematical physics) that change, in-

teraction, genesis, imply the theory of "external relations." Accordingly no assertion about the general character of genesis, change, etc., can be safely made without considering this modern analysis of them. For, if such assertions ignore this analysis, they may be in error. But Professor Dewey does seem to ignore this analysis in his accounts of genesis! With him we admit that existential complexes do change, do interact, do have a genesis. But change, interaction, genesis, in those cases at least to which Professor Dewey refers (p. 556), namely, biological, chemical, and some physical, can be shown not to be logically simple. Thus, to illustrate and prove my point, interaction can be analyzed into at least six simpler relations: (1) diversity between things; (2) diversity between the states of things; (3) simultaneity; (4) succession; (5) causality; (6) the relation of a thing to its states. And some of these can be further analyzed; for example, succession involves a certain type of relation between instants which eternally have the relations which they have and are what they are, unmodified although related—the "external theory." But further and very relevantly, there is that mode of treatment of physical alteration which is made in the case of heat, gravitation, and magnetic and electrical phenomena, as this is found to-day in authoritative treatises on the subject. The analysis of physical alteration in such cases reveals the fact that there is implied in each of them a potential-field which is made up of intensity-points bearing relations of a certain type to each other. Certain of these relations when integrated are identical with a potential surface, others with a potential difference, etc. But the intensity-points are eternally what they are, although they are related—the "external theory." This is the method of modern mathematical physics,⁵ and if it be called "Eleaticism" (p. 555), then the charge can be safely admitted. Chemical and biological changes and genesis have not yet been so treated, but to succeed in so treating them is always an ideal for the chemist and biologist. In the light, then, of such results, Professor Dewey's qualified admission that the theory of "external relations" holds only of spatial relations is wrong. In every case of physical alteration or interaction or genesis, where $y = f(x)$, representing the interaction, change, or alteration of two complexes, we have the theory of "external relations" applied when we get

$$(I) \quad \frac{dy}{dx}, \quad \text{and} \quad (II) \quad \int_a^b y dx.$$

⁵ See such subjects as the Newtonian Potential Function, Green's Theorem and Spherical Harmonics in such authoritative treatises as Webster, "The Dynamics of a Particle," and Jeans, "Electricity and Magnetism."

The finite change or alteration of a complex is the definite integral of values which, though related, do not change. With it the fact, then, that alteration and genesis are found, in those instances where they have been most precisely analyzed, to involve the "external theory," it is manifestly illogical to attempt to disprove this theory by appealing to those instances for which this analysis has not been made, but for which the presumption is that it can be. Until, then, our critic considers these facts, he has not really joined issue with us on this specific point. Indeed in arbitrarily accepting and arguing from any genesis, etc., as logically simple, without raising the question of the possibility of its analysis, he begs the question at issue.

The foregoing considerations also answer, then, the group of objections which constitute

Criticism 3. Is the theory of "external relations" "a doctrine of the relation sustained by terms in a proposition"? Answer: "Yes," so far as we have a genuine proposition and not merely a judgment (psychological), or so far as judgments contain true parts as distinct from false. Is the theory one "of the relation of existences *quâ* existences to one another?" Answer: "Yes" and "No"; "No" for unanalyzed complexes, "Yes" for analyzed, *i. e.*, for those "simples" to which analysis leads.

We now come to a fourth group of objections which may be put together under

Criticism 4. These objections concern the relation of knowing to its object—to existents and subsistents. They are all actuated by the dominance of the concept of genesis in Professor Dewey's thinking—a concept whose detailed logic he has nowhere given; *i. e.*, the objections are made from the standpoint of genetic psychology and without a thorough examination of the realist's contention that logic is logically prior to psychology. Thus the realist would maintain that what Professor Dewey has given in his many contributions is chiefly a genetic psychological account of the growth of knowledge, but that in doing this he has tacitly made use of certain logical principles which in their subsistence are neither accounted for nor produced by the genesis of knowledge or its study, although the knowledge of them may be. Professor Dewey objects somewhat (p. 556) to our speaking of the relation of knowing to its objects—especially if we regard knowing as itself a relation between two terms—which we do. But he himself always assumes that knowing is related to its objects. Then the reply can be made on the same basis, since this view, further, is justified! Modern logic shows that a relation, *R*, both relates and is related to its terms, and yet that the infinite regress thus implied is quite harmless (see Russell, *loc. cit.*, pp. 99–100). However, that which Professor Dewey would seem-

ingly have regarded as his most cutting criticism is that "surely it should be self-evident that the knowing process is not one of the terms of a proposition, unless the case of the special proposition about the relation of the knowing process to existence be exclusively taken." But "to suppose that the relation of the knowing process to the existence it deals with can be settled by an analysis of the relation of the terms (as terms) of the very proposition which passes upon the relation would seem to go the limit in the way of begging the question." This is his criticism of one of the propositions in one of the platforms to the effect that "by the 'external view' it is made logically possible that the knowing process and its object should be qualitatively dissimilar."

Reply: First, we are at liberty to speak of the relation of knowing to its object. Professor Dewey himself does so, and the question as to what is the character of this relation has been a great one historically, and that there is such a relation is a justified position. Now in the criticism last quoted, Professor Dewey hits us only at the cost of putting himself in a very serious predicament. And yet we believe that he will not, indeed, that he can not, accept the consequences of his own criticism. For, by its logic, he would be prevented from studying the genesis of knowledge, provided his own knowing has a genesis—which, of course, it has! Indeed, that it has is implied by the fact that he does study the genesis of knowledge in general, and in so doing he is analyzing a process which necessarily includes his own studying; he does study the relation of knowing to things, and this necessarily includes the relation of his own knowing to his own theory. By his own study, then, he is doing that which, by the logic which he uses in his criticism of us, invalidates his own efforts, his own study, his own results, and makes him "beg the question to the limit." Either he is guilty with us or we are innocent with him. But that he himself is innocent, he tacitly assumes. He does study knowing by knowing—the study, does know genesis by that which has a genesis, namely, the knowing. By his own procedure and tacit assumptions, then, he himself invalidates his own criticism of our procedure. What he himself discredits, we can not take as serious. What he will not and can not accept, he can not compel us to. And so we proceed and join issue with him as regards his general theory on that basis which he, in common with us, must accept, even if the effort be made not to. To explain further: Professor Dewey argues against us that we place ourselves in a predicament (beg the question) in attempting to find out about the relation of knowing to its object, because this relation of knowing to its object includes the attempt to find out about it, and so on in an infinite series. But he himself tacitly assumes in

studying and giving his genetic account that these difficulties are not insuperable. Then he must allow us to proceed on the same basis, *which we do*. He himself assumes, and in fact it can be shown, that the predicament is quite harmless. The point is this: Professor Dewey is especially interested in the genetic account of things. Now assume that the account which he has given is a true account—even to a large extent. He himself would feel hurt were this assumption not made, and he himself tacitly makes it. But the account is a set of propositions, and the genesis which it describes a process, which are or have been at some time the objects of *his* knowing. And yet, although *his* knowing has had a genesis and the account has grown and changed, he has always made the tacit assumption (and must make it) that, in so far as the account is true and the genesis real, they, although related to *his* knowing, are not created, altered, modified, or constituted by this, but are discovered in it. Briefly, for this relation between his own knowing and its object, the theory of “external relations” is used by Professor Dewey, and would still be used even if the claim were made, contrarywise, that there was a *real* alteration of the object by genuinely knowing it. For the discovery of even such a *real* alteration would itself presuppose the “external theory,” so that this claim would defeat itself. It is in this way, then, that we can answer Professor Dewey’s question as to what is the “warrant” for “transferring” the “external theory” to the cognitive relation, or to the relation between propositions, or the terms of these, or to existents. It is very evident that this warrant is one, not of manipulation, but of discovery by analysis, if one please, that the theory is involved, is applicable, is valid, as a matter of fact. And so to the further question as to whether or not the view applies to the relation between propositions and the existences to which some propositions refer, the answer must also be “Yes, it does!” For, if this distinction between propositions and existences is made, the “external theory” must apply to their relation; otherwise it would be impossible to discover a proposition which should refer to existences as they really are.

These considerations concern, then, a crucial point in the realist’s difference with Professor Dewey. The realist admits that one may study genesis—the genesis of anything which one finds empirically to have a genesis. But, if one can find the facts about genesis, it is also possible that it should be found that some “things” do not have a genesis, although the knowledge of them may have. And among such “things” he would insist that there are certain logical facts (as there are also certain existential terms), which not only are logically prior to any genesis, but are presupposed in any genu-

ine knowledge of real genesis. The realist can find room for both interests, although his own interest is in other facts, rather than in genesis exclusively. And this is, indeed, the method and purpose of such special sciences as chemistry, physics, mathematics, etc. To suppose that genuine knowledge in these fields can not be achieved until we know about the knowing of the chemist, the physicist, etc.—whether, for example, it is a natural event—is to commit the epistemological fallacy. For were this the case, then Professor Dewey could not know about genesis of any other kind until he knew about the genesis of his own knowing, and so on in an infinite series. The result would be, seemingly, that he could never have genuine knowledge of anything until this series is completed.

What the realist does, then, indeed what Professor Dewey tacitly does in this situation is to assume that at some point genuine knowledge not only is possible, but is actual. Professor Dewey makes this assumption in setting out to know genesis and in giving his results; the realist makes it in studying other things than genesis, and in giving results. Both Professor Dewey and the realist make it, each for his own theory, either as a whole, or for some parts. It is on this point, then, that the realist joins sharp issue with Professor Dewey. The realist recognizes that, wherever the assumption is made, either tacitly or explicitly, that genuine knowledge has been obtained, the tacit assumption is also made that the object known is not modified, altered, or constituted by the knowing. This means that the realist recognizes that in every case of genuine knowing, whatever the object known may be, the theory of “external relations” is presupposed as valid for the cognitive relation. Otherwise, *i. e.*, if the object known were modified or constituted either in whole or in part by virtue of being known—results which follow from the forced application of the theory of “internal relations” to the cognitive relations—then knowing were falsification, no knowing were possible, all knowing were not knowing!

These facts enable us to reply to an objection which, although not explicitly formulated by Professor Dewey, really underlies his whole criticism, and might be raised against our reply so far. This implied objection is that our reply is not *ad rem*, since in it we use “genuine knowledge” in a sense which Professor Dewey would not admit, and do not use it in that sense which he insists upon. According to Professor Dewey’s explicit accounts, genuine knowledge can have a meaning only in reference to genesis. That is, of course, his pragmatism. For him genesis conditions genuineness. He would say to us, then, that we have not joined issue with him until we have considered the relation between genuineness and genesis. And for him genuineness = efficiency in the genetic series.

Our reply to this implicit objection, which we herewith anticipate, is, in agreement with our preceding contentions, as follows: We can not alone consider that view of knowledge which Professor Dewey presents explicitly. We must also consider that view which he has tacitly assumed in working out and in offering his explicit genetic accounts to us as true. And the one crucial tacit assumption which we discover Professor Dewey making, and which we use as a fulcrum for an argument both *ad rem* and *ad hominem*, is that there is one instance which he assumes is genuine knowledge without giving, and without its being necessary to give, its genetic account. This is the instance of *his own knowing* of his own account. But if there is one case of this kind, there may be others! And if in this case the definition of genuine knowing which is tacitly used by Professor Dewey himself is that "knowing is genuine when the object is known as it really is, unmodified and unconstituted by the knowing, no matter what the history of this knowing may have been," then we are quite justified in making this a definition of genuine knowing in all cases. The definition in terms of genesis and efficiency can not displace this non-genetic definition, since the former presupposes the latter and the latter does not imply the former. Professor Dewey, then, must himself consider this tacit presupposition which he himself makes, and which we recognize, in order to join issue with us; for the continued insistence on the genetic definition will mean only that he continues to beg the question which we dispute, and that he hesitates or fails to consider all the implications of his own procedure and results.

The realist, then, accepts as the definition of genuine knowing that one which Professor Dewey himself tacitly uses and which his genetic definition presupposes, and further finds, since his attention is directed to this point by the idealist's application of the theory of "internal relations" to the cognitive relation, that for genuine knowing the acceptance of the theory of "external relations" is demanded. This theory presents the logical situation which is involved in the cognitive relation. And the necessity of ascertaining what this situation is, is shown by the fact that it is possible to discover what follows logically from the character of genuine knowing, as even Professor Dewey himself tacitly uses this, only by discovering what logical principles are involved in this knowing.

With this as a starting-point, then, the realist proceeds further by asking "what follows?" And he finds that a number of very interesting and important consequences follow, which, moreover, are confirmed by the actual history and development of knowledge. Among these consequences, now, of the validity of the "external theory" for the cognitive relation, the realist finds that

there is the possibility of genuine knowledge in any field, of anything, independently of knowing the genesis which this knowledge has. This holds, of course, for the knowing of genesis itself, even the genesis of knowledge. But the character and the details of the entities known are not in the least derived from or by manipulation of this theory or of the definition of knowledge. To find out these the realist depends upon experience, upon observation and experiment, and consistent analysis. Indeed it is one of the most important consequences of the "external theory" as valid for the cognitive relation that it not only logically allows, but *demand*s just this reliance on empirical investigation. And so, by the "external theory," the empirically discovered object may be anything whatsoever, either dissimilar or similar to the knowing—such a typical case of dissimilarity being Professor Dewey's own knowing of a physical genesis or of his own (subsistent) theory. Thus it is shown that in "deriving the possibility of a qualitative dissimilarity of the knowing and its object from the 'external theory,' " we are not begging the question, as Professor Dewey accuses us of doing, but are finding empirically that the situation involved in the cognitive relation, even as he himself accepts this, implies the possibility of this dissimilarity. And experience confirms this consequence.

But not only do these consequences follow; other very important ones do also. If the cognitive relation is such that it implies that we can know as if the knowing were not taking place, then it follows that we can go ahead and know without first studying knowing either epistemologically, or psychologically, or genetically. For, if we join issue with the philosopher who pursues such studies at the point of his own assumption, that a genuine knowledge of knowing in its genesis, etc., is possible, and that his own knowing does not *here* modify its object, *i. e.*, the propositions which make up his objective theory, then, *on the basis of this very same condition, knowing need not be studied in its genesis, etc., before we study other problems.* The temporal order of study is indifferent, or at least largely so. This consequence is confirmed by the way in which the special sciences have actually developed. And this is the way, too, in which we can get a real knowledge of logic. And, having it, we find that, just as in order to explain physiological phenomena, the facts of chemistry and physics must be used, so, to explain genesis, alteration, etc., logic must be used. This does not mean that validity is denied the problems of genesis, of psychology, etc., but does mean that logic is presupposed in the attempt to solve them, and that it is logically prior not only to this discovery, but to the genetic account of this discovery, and to its use.

This conclusion, then, brings to a clear focus the issue between

the realist and Professor Dewey. Professor Dewey's dominant interest is in genesis, and he views even logic from this standpoint; that of the realist is in other facts as well, independent of the fact that the information about these has, as a knowledge process, a genesis. So far, then, there is nothing incompatible in the two viewpoints. But there is a radical incompatibility as soon as the question is raised as to which is antecedent, at least when "antecedence" is defined with precision—which Professor Dewey does not do (p. 557). The realist, distinguishing logical and temporal antecedence, takes the position and grounds it, that the logic of proof, of classes, or relations, etc., is logically antecedent to the solving of questions of genesis, even to *proving* that there is a real genesis. Professor Dewey would, in consistency, seem to be obliged to accept this position, for, since he explicitly accepts the core of our realistic position in the statement (p. 554), "I agree with realism's contention that knowledge always implies existences prior to and independent of their being known," it would seem that he would be obliged to accept the logic which this realism implies, or give such reasons to the contrary as are not inconsistent with their own presuppositions. From the standpoint of the conclusions referred to above, then, and with the issue thus clearly defined, the four questions (p. 557) which Professor Dewey asks at the end of his criticism can be answered with precision.

Question 1. "Is knowing a natural event?" Answer: Yes, of course, but to show what is its factual character as such an event, and how it evolves out of other natural events, is to solve a problem in genetic psychology, and does not meet the realist's contention that logic is logically prior to both the genesis and the genetic account. For both the solution of the question and the occurrence of the genesis which that solution describes, and the final attainment of a true result, presuppose certain logical principles which subsist prior to and independently of their being known and used. The fact that these questions of genesis may be studied antecedently in time to the study of logic does not make them logically antecedent. A very similar reply can be made to

Question 2. "Is logic an account of getting knowledge or is it a theory of knowledge achieved?" Answer: Neither! Logic is a body of information about facts, a true knowledge of principles of proof, relations, classes, implication, etc. With this knowledge (logic) on hand, it can be and is used as a means to the getting of genuine knowledge, even of the knowledge of the knowing process, and also as a means of discovering what the logical situation is in achieved knowledge. But the account of getting knowledge and of what this is when once achieved is psychology and the history of

science, and not logic, although it involves logic both in process and result. Logic, then, has no closer alliance with a theory either of getting knowledge or of knowledge achieved than it has with, *e. g.*, chemistry.

Question 3. "Is it of any significance that achieved knowledge is expressed in propositions composed of terms—*i. e.*, of symbols?" Answer: The realist would question the equating of terms with symbols. However, ignoring this as a minor point, it may be said that the fact that knowledge is symbolized is of significance primarily to psychology, but presupposes certain logical principles—*e. g.*, that the symbol does not alter the symbolized although related to it—the theory of "external relations" again.

Question 4. "What is the relation of knowing as an event, a happening, to knowledge as a logical relation, whether of things or terms?" Answer: Relations, at least existential relations, "come and go"; some of the relations between terms, both subsistent and existent, are independent of others. Now the cognitive relation "comes and goes." This, then, is the relation of knowing as an event to knowledge (knowing) as a relation. The "coming and going" of the cognitive relation, under certain conditions, of course, is itself an event. However, the cognitive relation is not simply and purely a logical entity, any more than are other natural events and things; but it is logical in part and belongs to a certain type, say, that of symmetrical, transitive relations. Still, what this type is, the realist would admit to be an open question.

All four of Professor Dewey's final questions concern primarily and for the most part, then, the psychology of knowing. Therefore, by them, he does not really join issue with us in our contention that, in answering them, even to a limited extent, certain logical principles are presupposed, and that a more complete answer demands the explicit formulation of an extensive logic of relations, their types, their character, of classes, both finite and infinite, of implication, both formal and material, etc. In fact the realist would go so far as to say that if Professor Dewey gives a true account of the real genesis of knowing and of its conditions, he at least tacitly employs, in so doing, not only this logic, but also the principles of our platform, which incorporates some of this logic in its propositions.

The replies to all the foregoing criticisms which have been considered make clear also what is the realist's reply to one other criticism (p. 555) that the "external theory" makes knowing "accidental" or "supernatural," whereas this consequence is refuted by the fact that knowing is essentially "purposive" and "natural"—in effecting some alteration in existence itself. Our reply is: The "external theory" makes knowing no more accidental or supernatural

than it makes any other existent, *e. g.*, heat, electricity, etc., in whose explanation and exact scientific treatment it is implied (see *supra*). These are "natural things," and yet they involve the "external theory"! Therefore the fact that knowing involves the same theory does not make it accidental or supernatural. Second, real alteration of complexes is a fact, but a fact compatible with the "external theory" and the unalterability of "simples." So also with knowing! Taken descriptively and integrally, it is a complex process in the larger series of complex processes, and may be said to play its part in the larger process. But it plays the part that it plays, and that is, that when it occurs, under certain conditions, reality is known, and conversely. Third, this, too, may be said to be its purpose; but if so, the purpose is just that specific one of making reality known, so that quite analogously, and with as much reason, no more and no less, any existent, and indeed any subsistent, may be said to have the purpose of giving to "being" that characteristic which "being" would lack were such an existent or subsistent lacking. Accident, supernaturalness, and lack of alteration and of purpose, if they characterize knowing because it implies the "external theory," must characterize everything else which implies the same theory. But they do not characterize knowing because of this validity. Therefore the presence of alteration and of purpose and the naturalness of knowing can be admitted, and yet these be treated by the "external theory" in just those respects in which, as a matter of fact, this theory is found to be involved in them.

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REJOINDER TO DR. SPAULDING

I HAVE read with interest Dr. Spaulding's reply to my earlier criticism of one aspect of the realistic platform.¹ The only reply it occurs to me to make is that Dr. Spaulding's article, in spite of the many interesting things it contains, is not a response to my criticism. Doubtless owing to some obscurity in my original article, he conceives it to be written from the standpoint of a philosophic position, which, on other grounds (whether logical or psychological I know not) he attributes to me. He says: "Professor Dewey makes his criticism from the standpoint of genesis." On the contrary, it is made from a formal standpoint. Believing heartily that philosophical discussion suffers from ambiguous terms, and welcoming the "Platform" as an attempt to clear some of them away, I thought

¹ This JOURNAL, September 28, 1910.

I found the "Platform" using the term "external relations" in ways which involved taking advantage of an ambiguity. The reference to "knowledge getting," the phrase upon the basis of which Dr. Spaulding attributes a genetic standpoint to my article, is used simply in pointing out one formal aspect of the ambiguity. To repeat: External relations *may* hold of the terms of a proposition, without being a description of the relation of the proposition as an *existence* to other *existences*. I did not claim that it does not hold in this existential case; I claimed that to conclude that it holds (as the "Platform" does at a crucial point) *on the basis of an analysis of the relation of the terms of a proposition to each other as terms*, is to beg the precise question at issue; it is to assume that one can decide from the *im*-plication of a proposition a question of fact having to do with its *ap*-plication.

Without going outside the limits of my original criticism to discuss the new points raised by Dr. Spaulding (some of which I should be very glad to discuss, were it not that such discussion at this time would be sure to lead to further misunderstanding of my original criticism), I may borrow from his account of mathematical physics a way of restating my formal point. Suppose that a mathematical physicist stated that he could settle *in* a proposition of mathematical physics the scope and place in existence generally of the entities (or subsistents) forming the subject-matter of mathematical physics. Suppose some one (myself, for example) retorts that such a procedure begs the only point at issue. Would that retort be met by pointing out that I was ignorant of mathematical physics? Would that retort be equivalent to a denial of the validity and importance of mathematics within its own province, whatever that may turn out to be? Is it inconsistent even with an acknowledgment that it is possible—and desirable if possible—to state the relation in question mathematically? And if I went on to point out that the procedures by which the mathematical propositions are themselves established do not, on their face, agree with the claim made respecting the place of mathematical subject-matter, as such, in existence: would a reply that I am speaking about the "getting" of true propositions and hence arguing from an irrelevant standpoint, that of genetic psychology, have anything to do with the case?

I may add that the matter of Dr. Spaulding's reply adds to the evidence that the "Platform" at certain specific points (and I am speaking only of those points) does commit precisely the logical fallacy I charged it with. I mean his concluding to certain Eleatic properties of existence from a consideration of the implications of mathematical physics. I am not denying that mathematical physics has these implications; or that, as matter of fact, existence *may*

have these Eleatic properties; I am only questioning the formal logic of a procedure which assimilates physical and biological operations to static spatial relations because of the form the former take *when and as* they become the subject-matter of mathematical physics. And I add: Do the actual propositions of mathematical physics themselves rest upon purely mathematical implications and considerations, or do they rest upon experimental inquiries into matters of fact? If the latter, do these inquiries (being modes of "knowledge getting") belong to genetic psychology? And whether Dr. Spaulding answers "yes" or "no," what becomes of all that portion of his reply which claims that my criticism is irrelevant because made from the standpoint of genetic psychology?

I do not assume to know whether my statements deserve attention or not. If they receive it, I venture to hope that the discussion will confine itself to the points of procedure involved in my discussion.

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REVIEWS AND ABSTRACTS OF LITERATURE

Der junge Spinoza. Leben und Werdegang im Lichte der Weltphilosophie. STANISLAUS VON DUNIN-BORKOWSKI, S.J. Münster i. W: Druck und Verlag der Aschendorffschen Buchhandlung. Pp. xxiii + 633. 1910.

In a modest preface, the author of this learned work refers to the writings of Couchoud, Freudenthal, and others, and states that, after having occupied himself a dozen years or more with Spinoza, he doubted whether a new volume of the scope of the present one was called for. He concluded that, although he has no revolutionary discoveries to announce, he was in the position to offer a large number of new details, and even to set the spiritual development of the philosopher in a somewhat new light. This volume covers Spinoza's life up to the time of his excommunication; it is to be followed by a second, dealing with the mature man, and with his thought in its final and complete development.

The book is divided into five chapters. The first, treating of the biographies of the philosopher, the sources which may be appealed to, and the fables and traditions which sprang into being as a result of the interest his personality aroused in the men of his own and a later time, gives a pretty full and useful account of the materials the student of Spinoza finds ready to hand (pp. 1-78). The Count von Dunin-Borkowski has ransacked the libraries of Europe with unusual care and thoroughness, and his researches will be of interest even to those who may be inclined to use his materials in a quite different way.

The second chapter, on the boyhood and school-life of the philosopher (pp. 79-153), brings together what little is known of his family, and gives

a detailed and sympathetic account of the home and school education which he obtained in the Portuguese-Jewish colony in Amsterdam in the seventeenth century. The author cautiously tells us: "Information regarding Spinoza's family, and also regarding his philosophical development, *must*, in view of our present sources of information, be regarded as *hypothetical*. In what follows, independent investigations in both these *fields* will be presented, which, however, do not claim to reach historical *certainly*" (p. 77). I am compelled to state that, although I have every sympathy with an inquiry into "the times, the surroundings, and the educational influences which acted upon the philosopher," I can not think that even the learning and patience of our author enable us to arrive at a "high degree of assurance" touching some of the matters dwelt upon in the four biographical chapters. We know too little directly; and the field in which we are to exercise our ingenuity in guessing is too broad. Nevertheless, the attempt at construction has its fascination.

Chapter III., which deals with the possible influence upon Spinoza of the Jewish and Arabian philosophy—into which the author has evidently dipped with a good deal of care—is particularly interesting (pp. 153–245). The reader will find many suggestions and references which may be of use to him. The Count von Dunin-Borkowski is very sympathetic in his treatment; and he accounts for the strongly religious tone of Spinoza's philosophy, the mysticism with which it is penetrated, by dwelling upon the early religious training of the man and his studies while still largely under Jewish influences. That he could not have gotten this from the Cartesians, and was not likely to have gotten it from various other sources open to him at the time, the author is quite right in maintaining.

In some respects less sympathetic are the remaining two chapters of the book. They present an admirable fund of information touching the intellectual and religious ferment of the seventeenth century. The author is concerned to point out the sources of the thoughts which came to the surface in the "Short Treatise"; and he refers to an extensive literature which we in America do not often find it easy to come at. He has to do, however, with various persons and schools of thought, not only in sharp conflict with the Church, but apt to be felt as more or less repellant by men of strongly religious feeling, whatever their creed. The peculiarities of such he does not seem to find it very easy to treat with an impersonal fairness. To be sure, some of those of whom he writes must be admitted by men of all schools to be far from admirable personalities; but he is occasionally betrayed into a warmth of expression which will put his reader on his guard (pp. 468–492).

Every new book on Spinoza which comes into my hands impresses me with the fact that even patient and exhaustive investigation seems to add comparatively little to our direct and indubitable information regarding the sources from which Spinoza at first hand drew the elements of his doctrine. So much had become common property; so many notions were in the air breathed by every seventeenth-century scholar. The Count von Dunin-Borkowski is, as I have said, modest in his claims. He seems to me generally fair-minded. In emphasizing the dangers which attend the

running to earth of Spinoza's fundamental notions, whether in his earlier or in his later writings, and which fill us with doubt as we attempt to follow the development of the philosopher from year to year, I can not do better than to quote an admirable passage, touching the problem of historical interpretation, from the volume before us. Our author tells us that, in hunting out of old philosophies passages which suggest Spinozistic notions, we may be dwelling upon what Spinoza never saw with his own eyes; and yet there is danger of our reading into him too few such suggestions rather than too many: "What we now dig out of faded pages, the young student of philosophy read from the lips of his contemporaries. What is for us dead and printed wisdom was, for him, fresh and pulsating life. As the ideas of the organism, of evolution, of individualism are carried with the noise of the street to the modern layman—two hundred years hence our descendants will look these things up in philosophical encyclopedias—so, in Spinoza's day, there buzzed about every friend of philosophy notions derived from the Stoic, the Epicurean, from scholasticism, Platonism, Gassendi, Hobbes, and Descartes" (p. 164).

In other words, infinite extension, the impossibility of empty space, the sharp separation of soul and body, the intellectual love of God as the mystical consummation of knowledge, the One as both God and Nature—these conceptions were in many mouths; they were the common property of the philosophy of the day; how shall we determine whether Spinoza was, in a given instance, influenced by a particular voice, and to what extent? A similar problem faces every biographer who does more than chronicle the outward occurrences of a life; it is a most serious problem, when we have to do with a character reticent and self-contained, who furnishes his biographer with the scantiest information regarding himself.

We may, then, be grateful to the Count von Dunin-Borkowski for his sympathetic and painstaking study, which is certainly successful in helping us to realize the intellectual and emotional atmosphere in which Spinoza must have lived his life. We should not forget, however, as our author himself rightly indicates, that much that is suggested must be regarded as belonging to the realm of hypothesis.

As to the attitude taken with reference to Spinoza's doctrine, so far as the subject falls within the scope of the present book, the Count von Dunin-Borkowski finds in the "Short Treatise" less of the developed thought set forth in the "Ethics" than does, for example, Freudenthal. He recognizes just as unequivocally the influence of scholastic conceptions, but he has a very poor opinion of Spinoza's first-hand knowledge of Catholic doctrine, and attributes to him a pervasive "prejudice and misconception" (p. 451). The influence of the Jewish and neo-Platonic thought in molding Spinoza's conceptions of God and the world are not unduly emphasized.

Perhaps, to most readers of the present volume, what the author has to say of Spinoza and scholasticism will be of especial interest. The standpoint of the writer is, of course, that of scholasticism. To him Suarez is "the prince of metaphysicians" (p. 512), and his sincere devotion to the school of thought which he represents comes to the surface in many pas-

sages (*e. g.*, pp. 272, 348, 355, 451, 452). Whether a whole-hearted devotion to scholasticism is more likely to render a man biased in his judgment of Spinoza than is a whole-hearted devotion to Hegelianism, to naturalism, or to any other "ism," is a question which men will answer according to their individual proclivities. Certainly, the neo-scholastic need not feel bound to discover that Spinoza was really in his heart of hearts a churchman, and that is something.

I, for my part, feel inclined to enter a courteous protest against one position taken by the author, which seems to me to be a matter of no little significance in the interpretation of Spinozism as a system. It is maintained (p. 348) that Spinoza never was a realist in the Platonizing and medieval sense, but in his speculations touching the "universal" stood close to the moderate classical scholastics. To my mind, the reasonings of the "Ethics" are incomprehensible, if regarded from this point of view, though, undoubtedly, unequivocally anti-realistic passages may be cited. However, the author will have an opportunity to make good his position in the promised volume on Spinoza, the mature philosopher; and I shall await what he has to say with great interest.

The volume is attractive in style, and is handsomely gotten up. Two portraits in color, thirteen autotypes, and seven facsimiles accompany the text. There are copious notes and a good index. I hope that no criticism of individual points, contained in the above, will mislead the reader into supposing that I undervalue the scholarship and the patient investigation represented in the book. It may well be welcomed by those who approach Spinoza from widely different points of view.

GEORGE STUART FULLERTON.

COLUMBIA UNIVERSITY.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. October, 1910. *Les mathématiques et la probabilité* (pp. 329-360): F. LE DANTEC. — Mathematics is only the language of science. If we separate the physical facts from the mathematical verbalism that expresses them, the paradox "law of chance" vanishes and we have nothing but a calculus of averages. *Le moindre effort en psychologie* (pp. 361-386): TH. RIBOT. — The tendency to prefer repose is a rule, not a law. The apotheosis of it appears in many religious and philosophic ideals. When not useful it is a sign of regression. *La philosophie scientifique comme système de valeurs* (pp. 386-408): F. MAUGÉ. — Suggests a position compromising between intemperate apriorism and narrow empiricism. *Observations et documents*. H. PIÉRON: *Contribution à l'étude des sentiments intellectuels*. *Analyses et comptes rendus*. G. RICHARD, *La femme dans l'histoire*: J. DELVAILLE. L. BOURGEOIS, *Pour la société des nations*: J. DELVAILLE. Posada, *Principios de Sociologia*: G. RICHARD. Dr. A. Schlesinger, *Der Begriff des Ideals*. II et III: L. ARRÉAT. Raoul Mourgue, *La philosophie d'Aug. Comte*: P. FONTANA. Deroisim, *Notes sur A. Comte par un de ses dis-*

ciples: J. DAGNAN-BOUVRET. G. Vidari, *L'individualismo nelle dottrine morali del secolo*: J. SEGOND. A. Covotti, *La vita e il pensiero di A. Schopenhauer*: J. PÉRÈS. E. Troilo, *Idee e Ideali del Positivismo*: P. FONTANA. *Revue des périodiques étrangers*.

Doncaster, L. *Heredity in the Light of Recent Research*. (Cambridge Manuals of Science and Literature.) Cambridge: University Press. 1910. Pp. x + 140. 1s.

Essays in Modern Theology and Related Subjects. Papers in Honor of Charles Augustus Briggs. By various writers. New York: Charles Scribner's Sons. 1911. Pp. xvi + 347.

Heymans, G. *Die Psychologie der Frauen*. Heidelberg: Carl Winter's Universitätsbuchhandlung. 1910. Pp. viii + 308. 4 M.

Judd, J. W. *The Coming of Evolution. The Story of a Great Revolution in Science*. (Cambridge Manuals of Science and Literature.) Cambridge: University Press. 1910. Pp. iv + 171. 1s.

Fite, Warner. *Individualism. Four Lectures on the Significance of Consciousness for Social Relations*. New York, London, Bombay, and Calcutta: Longmans, Green, and Co. 1911. Pp. xix + 301.

NOTES AND NEWS

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

During the last meeting of the American Philosophical Association one frequently heard the following as an argument, against realism: How *can* the same object be both red to A and green to B, present parallel sides to one observer and convergent sides to another, etc., etc. Professor Miller argued, if I understood him rightly, that since the same object appeared differently from an indefinite number of different points of view, a realistic interpretation would involve the absurdity that the same object is or has all these different forms. Now, the other night I attended a meeting in which the guest of honor was father to one, brother to another, uncle to a third, professional associate to a fourth, teacher to a fifth, and bore a number of other relations to the others who had gathered to honor him, while at the same time and in the same meaning of the word, he was a friend to all those present. As no one has yet maintained that A is father to B only when B is conscious of the relation, the incident suggests that there is nothing impossible in the same object bearing an indefinite number of real relations to an indefinite number of different bodies, and at the same time bearing exactly the same relation to any number of different bodies. The incident and its suggestion are doubtless dreadfully commonplace and trivial. But I can not help thinking that there is something wrong with a philosophic attitude that asks how *can* such trivial things be.

Respectfully yours,

COLLEGE OF THE CITY OF NEW YORK,
January 6.

MORRIS R. COHEN.

THE sixth annual meeting of the Southern Society for Philosophy and Psychology was held at Chattanooga, Tennessee, December 27 and 28, 1910. The meetings were presided over by Professor Edward Franklin Buchner, who delivered the presidential address on the topic, "Learning and Forgetting." The officers elected for the year 1911 are: president, Dr. Shepherd Ivory Franz, Government Hospital for the Insane; vice-president, Professor A. Caswell Ellis, University of Texas; secretary-treasurer, Professor R. M. Ogden, University of Tennessee. Vacancies in the council were filled to constitute that body as follows: for a three-year term, Professors E. F. Buchner, Johns Hopkins University, and W. B. Smith, Tulane University; for a two-year term, Professor Bruce R. Payne, University of Virginia, and President H. J. Pearce, Brenau College; for a one-year term, Professors David Spence Hill, Peabody College for Teachers, and W. C. Ruediger, George Washington University. It was voted to hold the next meeting of the society at Washington, D. C., in affiliation with the American Association for the Advancement of Science, provided the American Psychological and Philosophical Associations meet at the same place and time.

THE Fourth International Congress of Philosophy, which is to be held at Bologna April 6-11 of the current year, will be divided into eight sections: General Philosophy and Metaphysics, History of Philosophy, Logic and Theory of Science, Ethics, Philosophy of Religion, Philosophy of Right, Esthetics and Methods of Criticism, Psychology. The following papers will be presented: S. Arrenius, "Ueber den Ursprung des Gestirnkultus"; G. Barzellotti, "Filosofia e storia della filosofia"; E. Boutroux, "Du rapport de la philosophie aux sciences"; R. Eucken, "Die Aufgaben der Philosophie im Kulturleben der Gegenwart"; P. Langevin, "L'évolution du mécanisme"; W. Ostwald, "Elementare Begriffe und die Gesetze ihrer Verbindung"; H. Poincaré, "La définition"; F. C. S. Schiller, "Error"; C. F. Stout, "The Interrelation of Objects and Ejects"; F. Tocco, "La questione platonica"; W. Windelband, "Die Metaphysik der Zeit"; A. Riehl, "Fortbildung Rautischer Gedanken in der Philosophie der Gegenwart." There will be a discussion on "The Task of Contemporary Philosophy," introduced by H. Bergson with a reply by A. Chiapelli, and on "Judgments of Value and Judgments of Reality," introduced by E. Darkheim.

A LECTURESHIP on the history and institutions of the United States has been established at Oxford, to be held by American scholars. The subject-matter of the lectureship is to be the political, institutional, economic or social history or conditions of the United States.

DR. GÜNTHER JACOBY, privatdocent at the University of Griefswald, and research fellow in philosophy at Harvard University, is giving a course of seven lectures on "Schopenhauer," the first of which was delivered January 6. The lectures are open to members of Harvard University.

At the University of Pennsylvania Dr. Arthur Holmes and Dr. F. M. Urban have been made assistant professors of psychology, and Mr. S. F. Fernberger has been made instructor in psychology.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE LOGIC OF MR. RUSSELL¹

IN a recent bit of criticism that appeared in this JOURNAL, I remarked, incidentally, that all fruitful concepts are developed in connection with the field to which they are to be applied; that is, the concepts of any one science are too specialized to be safely taken over into any other science without reinvestigation of their material significance. But it is sometimes a question whether a field is really of a new sort, and if not, a development of its concepts should lead to the rediscovery of already existing concepts. Certain things look as if this were the situation of the new logic that is being developed in connection with mathematics; that is, it may be the old logic all over again. It is the aim of this paper to suggest this as probable, although a much fuller investigation, involving questions not so much as mentioned here, would be necessary to raise this probability to a certainty.

Formal logic has always pretended to a generalized significance. To be sure, in problems directly concerned with quantity and order, and in certain relational formulæ, there have been short cuts to conclusions and a specialized division of the general subject. The whole subject-matter of mathematics is such a special field. In his "Principles of Mathematics" Mr. Russell has attempted to develop a new logic in connection with this field, but by the time he has reached Chapter X.—less that a fifth of the way through the book—he finds himself confronted with an insolvable contradiction. Related contradictions have blocked the way for all other writers on symbolic logic, or would have, if they had not continued to develop their systems in spite of them. Frege² writes this remarkable Nachwort: "Einem wissenschaftlichen Schriftsteller kann kaum etwas Unerwünschteres begegnen, als dass ihm nach Vollendung einer Arbeit eine der Grundlagen seines Baues erschüttert wird. In diese Lage wurde ich durch einen Brief des Herrn Bertrand Russell ver-

¹ Cf. *American Journal of Mathematics*, Vol. 30, 1908, pp. 222-262.

² "Grundgesetze der Arithmetik," Bd. II., S. 252.

setzt, etc.” Now, Mr. Russell thinks he has found a way out through a new concept, that of logical types. I intend here to ask what that concept really is. Can it be an old concept rediscovered and dressed up in new clothing?

The chief of the contradictions that have come under consideration, as given by Mr. Russell, are: (1) The Epimenides. (2) The class of all those classes that are not members of themselves. This class can neither be nor not be a member of itself. (3) If T is a relation which subsists between two relations R and S , when R does not have the relation R to S , then “ R has the relation T to S ” is equivalent to “ R does not have the relation R to S .” But if R and S have the value T , by substitution, “ T has the relation T to T ” is equivalent to “ T has not the relation T to T .” (4) The least integer not namable in fewer than 19 syllables must denote a definite integer (111777), but this integer is denoted by the phrase itself, which is a name consisting of only 18 syllables. (5) “Richard’s paradox” is somewhat similar to this, but concerns a decimal which is at once definable and undefinable. (7) “Burali Forti’s paradox”: if the series of all ordinals has an ordinal number, that number is one greater than the last number of the series; then there is an ordinal number not in the series, and it is not the series of *all* ordinal numbers.

These paradoxes all have a common characteristic, self-reference; and they assert something of all cases of a certain kind. “This leads us to the rule: ‘Whatever involves *all* of a collection must not be one of the collection’ ” (p. 225). But if this is true, the “quaint” laws of thought are meaningless; we can not say all propositions are true or false, and mathematical induction is impossible. Thus the cure is almost worse than the illness. The difficulty can be avoided, Mr. Russell thinks, by distinguishing between the use of *all* and *any*. “Thus we may say: ‘ p is true or false, where p is any proposition,’ though we can not say ‘all propositions are true or false.’ The reason is that, in the former, we merely affirm an undetermined one of the propositions of the form ‘ p is true or false,’ whereas in the latter we affirm (if anything) a new proposition, different from all the propositions of the form ‘ p is true or false.’ Thus we may admit ‘any value’ of a variable in cases where ‘all values’ would lead to reflexive fallacies; for the admission of ‘any value’ does not in the same way create new values. Hence the fundamental laws of logic can be stated concerning *any* proposition, though we can not significantly say that they hold of *all* propositions. These laws have, so to speak, a particular enunciation but no general enunciation. There is no one proposition which is the law of contradiction (say); there are only various instances of the law” (pp. 229–230). I quote this

passage in full, as an example of the curious limitations to which this formulation of logic is submitted.

Mr. Russell has always valued this distinction between *all* and *any* which, in his nomenclature, is an expression of the distinction between the real and the apparent variable. In his "Principles of Mathematics" we read: "And when we say '*X* is a man, implies *X* is mortal for all values of *X*,' we are not asserting a single implication, but a class of implications; we have now a genuine proposition, in which, though the letter *X* appears, there is no real variable: the variable is absorbed . . . so that the result is no longer a function of *X*.'" It is, then, an apparent variable, "whereas in '*X* is a man' there are different propositions for different forms of the variable, and the variable is what Peano calls *real*.'" ³

Consider the apparent variable: if "*X* is a man implies that *X* is mortal for all values of *X*," it must be because *mortality* is an essential part of the connotation of man; and, if this is true, propositions of this form are what the non-mathematical logician knows as verbal propositions. On the other hand, the propositional function "*X* is a man," which is only true for certain values of *X*, is what gives rise to what are commonly called real propositions. Mr. Russell's rule, then (*cf. supra*) becomes "Verbal propositions can not admit themselves as included in their subjects"; and this is in some ways a more serviceable statement than Mr. Russell's, for it permits such propositions as the laws of thought, which are not verbal, to be reflexive and true, and at the same time it is equally serviceable in avoiding the paradoxes (*cf. infra*). Before taking up the paradoxes, I want to follow Mr. Russell's exposition somewhat further.

Concerning propositions in which *all* occurs, we find: "Every proposition concerning *all* asserts that some propositional function is always true; and this means that all values of the said function are true, not that the function is true for all arguments, since there are arguments for which any given function is meaningless, *i. e.*, has no value. Hence we can speak of *all* of a collection when and only when the collection forms part or the whole of the *range of significance* of some propositional function, the range of significance being defined as the collection of those arguments for which the function in question is significant, *i. e.*, has a value" (p. 236). In the course of drawing this conclusion, Mr. Russell himself says that he is near to the traditional doctrine of the universe of discourse. The development in the text is not quite clear on the point, but the author apparently believes his *range of significance* to be something much more weighty. I have failed to discover just what that extra significance is.

³ "Principles of Mathematics," p. 13.

To pass to the theory of types: "A *type* is defined as the range of significance of a propositional function, *i. e.*, as the collection of arguments for which the said function has values. . . . The division of objects into types is necessitated by the reflex fallacies which otherwise arise. . . . Thus whatever contains an apparent variable must be of a different type from the possible values of that variable; we will say it is of a *higher* type" (p. 237). Let us stop a minute and reinterpret this in the language of our more familiar logic: With respect to verbal propositions (propositions containing an apparent variable), the universe of discourse (range of values of the apparent variable) is its type. Reflexive fallacies necessitate the consideration of the universe of discourse. Thus a verbal proposition, as such, must be in a different universe of discourse from the connotation of its subject term. Why not? The verbal proposition as above defined concerns itself with connotation, but it is itself an object of denotation. Now, by the principle of contradiction, it can not be both a denotation and a connotation in the same sense, in the same relation, and at the same time. The verbal proposition is then in a different universe of discourse from that prescribed by its subject term.

To continue the exposition: Propositions containing apparent variables (verbal propositions) are generated from those that do not (real propositions), by a process of generalization, *i. e.*, the predicates become known as a part of the connotation of the subject, by generalizing from particular instances of the subject where it is observed as a real attribute. Such propositions are called by Mr. Russell *elementary propositions*. The terms—Mr. Russell means here only the subjects—of elementary propositions are individuals, and these terms furnish the lowest, or first, type; the universe of discourse within which a predicate is related to an instance or a number of instances of a thing, is a lower universe of discourse than that in which it is predicated as a connotation of the thing or things.

A somewhat grave difficulty appears here in Mr. Russell's system. He wishes to generalize from individuals occurring in elementary propositions and so obtain new propositions, but in order to do this he is obliged to demand that no individual shall be a proposition. This is done by defining the individual "as something destitute of complexity" (p. 238), but any philosopher must be a little aghast at the sweep of this procedure, and begin to wonder whether there are any elementary propositions concerning individuals.

"Elementary propositions, together with such as contain only individuals as apparent variables, we will call *first order propositions*. These form the second logical type. . . . We can . . . form new propositions in which first order propositions occur as apparent

variables. These we will call *second order propositions*. They form the third logical type" (p. 238). That is, first order propositions are those by which things are included in some universe of discourse; second order propositions are about first order propositions, and therefore imply a larger universe of discourse. If "Cows chew cud" is a first order proposition, "It is interesting to know that cows chew cud" is of the second order. The universe of discourse is enlarged from its bovine limitations to the whole realm of the things which it is interesting to know. Of course the process can be continued indefinitely.

Let us consider the application of this logic to the paradoxes mentioned above:

1. "Thus when a man says, 'I am lying,' we must interpret him as meaning: 'There is a proposition of order n , which I affirm, and which is false.' This is a proposition of order $n + 1$; . . . hence his statement is false, and yet its falsehood does not imply, as that of 'I am lying' appeared to do, that he is making a true statement. This solves the liar" (p. 240). Perhaps; but in the older language, "I am lying" is a real proposition and attempts to present a certain situation. It may fail to do so, and so be false, without its failure making it succeed—an absurdity; for it and the situation it intends to present are in different universes of discourse.

2. (Cf. 4, *supra*.) "The least integer not namable in fewer than nineteen syllables" presents some special difficulties. After limiting "not fewer than nineteen syllables" to a finite number, Mr. Russell continues: "We may next suppose that 'namable in terms of names of the class N ' means 'being the only term satisfying some function composed wholly of names of the class N .' The solution of this paradox lies, I think, in the simple observation that 'namable in terms of the class N ' is never itself namable in terms of names of that class. If we enlarge N by adding the name 'namable in terms of names of the class N ,' our fundamental apparatus of names is enlarged; calling the new apparatus N' , 'namable in terms of names of the class N' ' remains not namable in terms of names of the class N' . If we try to enlarge N until it embraces *all* names, 'namable' becomes (by what was said above) 'being the only term satisfying some function composed wholly of names.' But here there is a function as apparent variable; hence we are confined to predicative functions of some type (for non-predicative functions can not be apparent variables). Hence we have only to observe that namability in terms of such functions is non-predicative in order to escape the paradox" (p. 241). This hardly shows the simplicity of the theory of types. If one considers as his universe of discourse certain named numbers, the proposition that selects one of these does not

define it, for it is in a different universe of discourse. If this denoting phrase were admitted to the same universe of discourse with the named numbers, to utter it would be a contradiction in defining.

3. (*Cf. 5, supra.*) The least indefinable ordinal is analogous, but "The other contradictions, that of Burali Forti in particular, require some further developments for their solution" (p. 241). It is interesting to see what we can do with them without this development.

4. Concerning contradiction (3, *supra*). I speak with some diffidence. If T is such that either RTS or RRS , where R , S , and T are relations, then RTS is equivalent to $R\bar{R}S$, and if $R=S=T$, then $TTT=T\bar{T}T$; but such symbols are exceedingly tricky to deal with, and a formal logic of relations, if possible, is yet far to seek. It is doubtful whether any expression, in conformance with the law of identity, can be used identically as term and relation; it is possible, then, that $R=S=T$ is an illegitimate expression with respect to this substitution, and, if so, the paradox disappears.

5. (*Cf. 2, supra.*) As to the class of all classes not contained in themselves. This paradox need not present any difficulty. The class of horses is not a horse, while the class of not-horses is a not-horse, so the two implied classes exist. But a class exists only in its connotation and denotation, *i. e.*, only in its members. Then to say that a class is contained in itself is either an identical proposition (the class is itself), or it is the assertion that the class name is found amongst its denotations and is implied by its connotation, as in the case of the not-horse. The first alternative can not even suggest paradox. As to the second, if "A class is contained in itself" means "The class name is found amongst its members," then to ask if the class of all classes whose class names are not found amongst their members has its name found amongst its members, is a perfectly possible question, and can be answered negatively. Its name can not be found amongst its members, for its members are classes, not names; they are a different order of things and so in a different universe of discourse. It is then the sort of class that its name denotes, but no contradiction is implied, so long as the class is not confused with the class name.

6. With respect to Burali Forti's contradiction (*cf. 7, supra*), I have elsewhere pointed out⁴ that there is a real ambiguity in the concept number when defined as a type of a series, and the infinite and the finite numbers are connotatively in different universes of discourse, and it is only by neglecting this distinction that the contradiction arises. In the only sense in which *all* is permissible of an infinite collection, it does not follow that the addition of 1 is pos-

⁴ This JOURNAL, Vol. V., 1908, pp. 628-634.

sible in any sense that would create a greater ordinal, and if not, the contradiction disappears. Mr. Russell's new theory leads him to the conclusion that there can be no totality of all ordinals (p. 261), so he dismisses this contradiction on practically the same grounds.

The reason, it seems to me, why Mr. Russell's theory of types solves the contradictions, is that it is a rediscovery of the concept of universe of discourse, and of the distinction between connotation and denotation. This paper does not pretend to give a complete account or criticism of the logic. It is enough if it serves to strengthen a suspicion that its author believes to be prevalent amongst many philosophers, namely, that the new logic is nothing but the old logic dressed up in new clothes; and the author would add that, inasmuch as these new clothes are borrowed from a highly technical science which is a closed book to many, it is an unnecessarily inaccessible form; and it may even be that this rediscovery, if such it prove to be, has not yet progressed as far as its prototype had gotten. If so, to recognize the kinship might further its development, and any studies tending to confirm or to destroy this suspicion should be welcome.

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SOCIETIES

THE TENTH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

AN excellent arrangement of the program by the executive committee and an almost absolute power wisely wielded by the presiding officer made possible the great success of this meeting. There was general approval of the unification of the program by selecting for reading only those papers whose subjects were more or less closely connected with the principal topics under consideration, with a resulting gain in time for the discussion, which was allowed to run on as long as it seemed profitable. A partial rearrangement of the program was found advisable, and several papers were withdrawn by their writers during the meeting so as to allow still more time for discussion, which proved unusually enticing and instructive. The opinion was expressed that the plan of unifying the program could be carried even a step further by selecting one principal topic for discussion and announcing this as early in the year as possible. The discussion during the meeting, though sharp and incisive, was permeated by an honest desire to come to a mutual understanding. Great credit is due to the authors of the "Platform of Six Realists," whose views were the main topic for discussion,

for having had the courage and ability to formulate a number of propositions on which they found an agreement possible. The platform thus far published is only a first attempt, but its effect has already been most clarifying. It is a matter of regret that some of the statements made during the meeting regarding the *special problems* underlying the tenets of the platform could not have been incorporated in the platform paper itself. It was quite apparent that some of the arguments against the new realism were moving in the realm of a different generating problem. The importance of the concept problem was well emphasized in Professor Montague's remark that the process of discovery has nothing to do with the question of validity. A clearer recognition of the principle here indicated, that the assumptions necessary for the solution of a definite problem do not affect, and may even contradict, the assumptions necessary for the solution of a different problem, and a definite renunciation of the principle of self-evidence as a valid court of appeal, would pave the way for a better understanding and more fruitful discussion of the issue presented by the new realism. These things were in the air during the meeting, and they produced the feeling (at least in the present writer) as of the dawn of a new day in philosophy, not produced by the radiance of an overpowering genius-to-come, but by the initiation in philosophy of that *cooperation* compared with which the work of even the greatest genius pales.

Professor Miller opened the meeting with "An Examination of Four Realistic Theories of Perception." He called them, respectively, the picture theory, the window theory, the doorway theory, and the sunshine theory. The first speaks of an object not mental and its picture in the mind. The second takes the "awareness of an object" as an ultimate fact. In the third the object plants itself in the doorway of the mind, but continues to be in the physical world if we turn our attention away; the object being itself "mind-stuff" or simply "stuff." The last is an "efflux-theory," which identifies the efflux with the object. The following difficulties were urged against these four theories. The first duplicates the object, for which there is no warrant in our experience: we do not "see double." The second does not account for illusions; how do we even know that there is a "window"? The third does not seem to take account of the machinery of perception: it takes time to make an impression. The last is a refinement of the picture theory, but has nevertheless its defects. The speaker disclaimed any attempt to refute the new realism in pointing out these difficulties. And he expressed himself in sympathy with the platform idea.

In the lively discussion which ensued Professor Woodbridge suggested that Professor Miller's difficulties sprang from his funda-

mental assumption of mind as a room and perception as a process by which things appear. Do not start thus, he said, and the whole problem is radically changed. It is hard to state this contrasted view. But the problem of vision will then become simply a problem of mechanics, and the whole problem of how a thing appears in mind is eliminated. Professor Marvin suggested the addition of a fifth theory of perception which he called the "out-of-doors" or "fresh-air" theory. There we start on a level where there are no illusions, namely, with the raw material which is the source of all our problems.

This whole train of thought was well continued in the second paper, in which Professor Woodbridge discussed "The Belief in Sensations." As a special example of the lack of clear concepts in psychology, so strangely contrasting with its great practical success, he specified the term "sensation." What difference is there between tone and sensation, between red and sensation? If there is a difference between them, specify it; if not, what are they? And yet, in spite of this lack of clearness about the nature of sensations, they are considered in our psychologies as the elements of mind! The usual evidence for the belief in sensations was discussed under four heads, the "relativity of sensations," "dreams and illusions," "pain and similar experiences," and "introspection." The evidence was dismissed as insufficient to establish the existence of sensations in the subject, and a restatement of the problems therewith presented was given in terms of the organism and its reactions. "Things which have been called sensations are stimuli to thought and behavior, but not the constitutive elements of mind!" Even introspection does not disclose sensation, but only "things sensed." On the other hand, Professor Woodbridge did not mean to offer a substitute for sensation, because he held that even the demand for a substitute sprang from a philosophical confusion. He would replace the problem of sensation by the following two: "(1) What, as matter of fact, are the objects with which we are consciously familiar?" and "(2) What are the causes of the appearance of consciousness?" But these are problems of positive science, not of epistemology.

It was to be expected that so remarkable a paper would be vigorously attacked. To Professor Lovejoy it appeared like an invitation to go back to infancy. It is very well for neo-realists to urge us to go out-of-doors; but we *are* indoors. The dualistic difficulty has broken out. What are we going to do about it? Miss Calkins found herself in agreement with part of Professor Woodbridge's paper, especially his demand for more careful definitions, his small regard for the parallelistic theory as a fundamental method in psychology, and even his denial that we introspect sensations: color is best

explained as "supposedly existing red character." But she vigorously protested that the whole theory "is utterly one-sided" in that it completely omits the "self" which immediate consciousness gives us. Professor Sheldon held that thoughts are something qualitatively different from sensations and saw in this a menace to the realist. Professor Miller declared he did not know what Professor Woodbridge was trying to prove: we must understand facts by categories! Professor Woodbridge, in replying, turned particularly against the charge that neo-realism meant an invitation to return to infancy. He reminded the audience that most of the neo-realists had been for years idealists. It was not their lack of acquaintance with idealism, but its inherent insufficiencies, which drove them to neo-realism.

The discussion of neo-realism, which had sprung up with the very first paper of the meeting, was now officially opened by Professor Dewey. He did not wish to be considered an out-and-out opponent of neo-realism. His criticism was directed merely against certain points of method. He considered that the neo-realists, or at least some of them, had tried to reach conclusions about *existence* by developing purely *conceptual* implications. As evidence of this he referred (1) to the doctrine that "certain principles of logic are logically prior to all scientific systems," and (2) to the prominence given to the theory of the "externality of relations." After expressing his full agreement with the neo-realists in their opposition to idealism, he proceeded to the discussion of the following two questions: "(1) How far is realism preferred as a *positive* body of doctrines? (2) How far does the logical analysis of the logic of propositions enter into the determination of this positive body of doctrines?" "Mental" may be defined in terms of "implication." On what grounds, then, do realists deny that logical entities are mental? Is it not at least a discussable hypothesis that "number" is a transformation of a physical fact for purposes of implication? A thing thus would undergo a change in becoming an "inferential thing." His question was not whether the knowledge relation modifies *its* terms; but whether, assuming things to exist independent of and prior to the knowledge relation, they undergo a change in *becoming* terms of a proposition. On what grounds do neo-realists deny this?

The afternoon session was opened by Professor Perry, who spoke, in place of Mr. Pitkin, in behalf of the neo-realists. The main problem of neo-realism is the reconciliation of independence and immanence; and its principle is: terms may enter into relations without forfeiting their identity. It is opposed to nominalism, it is opposed to sensationalism: logical entities belong to the texture of

reality. It is in sympathy with modern logic. Idealism gives man a preeminent position in the universe, which realism denies. In reply to Professor Dewey he maintained that logic is prior to other systems. Analysis reveals abstract entities, such as unity, relation. This structure is more universal than the particular objects. But you must add particular characters to get the particular object. The logical plane intersects things; what is true of them logically is true so far as it goes. Neo-realism does not deny an *indirect* modification of the object by the knowledge relation; for knowledge may cause *action*. In discussing this principle of neo-realism, that the knowledge relation does not modify the object, it must be understood in the light of this stricter interpretation. Here is a desk; realism takes it to exist with its properties; I glance at it, or in any other way establish a knowledge relation; then this new fact does not modify the desk. That I *know* " $2 + 2 = 4$ " does not affect the logical relation expressed in the equation.

The discussion which followed these papers of the two leaders was participated in by many speakers. Professor Marvin: Ought philosophers ever to indulge in existential propositions? Should they not rather take the existential propositions which science has given us? Professor Spaulding: The method of the neo-realists is purely empirical. We find that any science of objects necessarily presupposes that these objects are not modified by our studying them. This is true in physics. Professor Dewey has assumed it in his own studies. Start with the contrary assumption, namely, that an object is modified by the knowledge relation; is *that* process known without modification? Professor Dewey: You ask the same type of questions as Professor Royce does. Knowledge is a process with a purpose. Its outcome justifies it. Professor Spaulding: Professor Dewey takes the genetic view of knowledge. But first he studies the genesis of his own knowledge. And here he implies a logical doctrine: his knowing does not modify the object known at least in this case. And this is the essence of realism: objects can be known as they are and as if the knowing were not taking place. Professor Montague: Realism is a protest: the process of *discovery* has nothing to do with the question of *validity*. Genesis has no relevancy to truth. Professor Ormond: One way of getting to knowledge is by the logic-process. Would it not follow that our successive acts of knowledge do modify the object of knowledge? Professor Montague: Professor Ormond is not taking "modify" in the precise sense defined by Professor Perry. Professor Spaulding: How would you find out, *how much* knowledge modifies the object? Professor Ormond: Such a question can only be answered by experience. Professor Norman Smith: Professor Dewey's question has

not been answered, namely, whether *getting* into consciousness makes a difference. Professor Horne: The usual objection to the method of introspection in psychology is that the object of introspection is modified by the act of introspecting. Here, then, seems to be at least one class where modification of the object by the knowledge relation is admitted. Another is the social point of view: It makes a difference to us to be known. How did realists get outside of knowledge to know what the object-not-known is?

Miss Calkins concluded the discussion for the day with her paper "The Idealist to the Realist." It consisted of a refutation of criticisms on idealism, and an attack on the positive doctrines of neo-realism. Realists claim that their principles are demanded by science and logic. But idealism can not be subversive of logic, if logic is defined as the formulation of the laws of consistent thinking. And if science demands the distinction between object and subject, this is possible and necessary on idealistic grounds; for we know ourselves as bounded; this boundary is the other-than-myself, the beyond; and yet it must be mental, for I know it; it can only exist as known. This is not an assumption on the part of idealism, but a discovery, the result of analysis. Empiricists are guilty of an unblushing willingness to sacrifice empirical fact to logic when they argue from the "externality of relations" to the independence of objects from the mind. The ubiquitousness of the "ego" is not a "predicament," but a significant fact. The distinction between shared and unshared experience is an expression of such an empirical fact. Solipsism is not a necessary consequence of the idealistic starting point. Regarding the positive doctrines of the neo-realists, the most important are the conceptions of reality in scientific terms. But are these in no sense conditioned by being known? Analysis reveals that "atoms," "ether," "energy" are simply ways of knowing; they reduce to sense-qualities or relations, *i. e.*, to ideal terms. Our objects are found to be simply complex forms of experience.

In the evening the president, Professor Bakewell, addressed the association on "The Problem of Transcendence," which will be published in full in the official report of the meeting.

The session was opened Wednesday morning by Professor Montague's paper "The New Realism and the Old." He attempted to specify the definite problem which the new realism attacks and the realm to which the propositions of the platform should be restricted. It is not a problem of "ontology," but of "epistemology"; even here a distinction is necessary between the methodological question of the sources and criteria of knowledge, and the simple question "whether or not the known exists independently of the fact that it

is known." The latter alone is the problem of neo-realism. He sketched three historical solutions of this problem: natural realism, epistemological dualism, and subjectivism, and showed the deficiencies which prohibit the unqualified acceptance of any one of these. Neo-realists are amending natural realism; in particular the objections arising out of the problems of illusions, dreams, and the relativity of sensations were met by declaring all these to be real, not merely apparent, relations between objects, and by distinguishing them as "binary" from the so-called real, namely, "triadic" relations. Properties are not due to the knowledge relation, but to the relations of objects to objects. And the brain is one such object.

Professor Pratt: Would sound be existing even if there were no ear? Professor Montague: We do not know whether sound depends on an ear or extra-organic relations. Professor Miller: The same tree will appear green to the near, bluish to the distant observer. Are both to be considered properties of the tree? We would then have a multitude of attributes in relation to possible perception at different removes. Miss Calkins: A number of idealists here have been united on one point at least,—the impossibility of a purely internal world; whether they express this in the form: I and the world; or, the will and the beyond; or, I know myself as thwarted; in each case they maintain that one immediately knows more than one's own self. The most important question to the realist is: How can you explain illusions by calmly calling in brain and sense-organs and objects in space? They are just what is in question: *What is the object?* Professor Keyser: It can be proved equally well that all things are mental or that all things are non-mental. We prefer the first hypothesis merely because everybody is certain that at least some logical entities are mental. Professor Dewey: This shows that it is a wrong method to confine yourself to conceptual elaboration. If I were a neo-realist I should be aware that mathematics has played into the hands of idealism. Imagine that idealism had disappeared with its presuppositions, what problems would be left? Professor Marvin: In our discussions here two distinct meanings of logic have come to light. The first is a study of the knowing process. The second has nothing to do with "knowing." Realists take logic in this second meaning. Professor Ormond: I offer a new definition of neo-realism. It is a "solipsism of the object." Professor Lovejoy: More adherence to definitions is required, if we want to come to an understanding. Appoint a committee to define the fundamental terms which are to be used in the discussion. Professor Perry: Realists disclaim the Cartesian axiom. *Cogito ergo sum* is not a prime certainty. Professor Spaulding: Cognition need not be studied before things are known.

Professor Hibben then opened the discussion of "The Value for Philosophy of Mathematical Methods and Ideals." Mathematics is a phase of logic developing the necessary implications of certain fundamental postulates. The possibility of extending knowledge by mathematics beyond the limits of observation depends "on the manner in which the mathematical system articulates with our real experience." This point of articulation is the original postulate. On it depends therefore the value of mathematical prediction. Can we develop philosophy *geometrico more*? No; because the fundamental conditions underlying philosophy are too complex to be expressible in a limited number of postulates. The conquests of mathematics suggest, however, the possibility of a fundamental unity underlying a general Weltanschauung. In this sense mathematics will remain an ideal of philosophy.

Dr. Brown, the second leader of this discussion, held that mathematics has to philosophy no more intimate relation than any other science. All mathematics begins as a representation of reality and remains thus in so far as it is significant. But it does not copy reality. Its concepts are symbols which signify operations on reality; their value is to be judged by their success. Novelties are only apparent in a deductive system; the propositions are merely more serviceable forms of the same essence which is implicit in the postulates. As regards the value of the deductive system form for philosophy, we must distinguish a constructive and a reconstructive use of this form. Neither is applicable in philosophy; the former, because philosophical systems grow by the aggregation of new facts, mathematical systems by the development of their implications; the latter, because the number of fundamental concepts and postulates which are required is too great in philosophy, owing to its great complexity. Dr. Schmidt: It is unfortunate that the value of mathematical methods and ideals, which I consider very great, should have been discussed by two speakers who both argued on the negative. It is significant that their results are based on a certain conception of the deductive system form which is open to doubt in essential points. A careful study of this form as exhibited in mathematics should prove a fruitful subject of philosophical inquiry. It seems also important to call attention to the success of mathematical methods already attained in the field of logic. The complexity of philosophical presuppositions can not be argued against the application of the deductive system form, so long as they have not been exhibited. But no form whatever can make unsound reasoning sound; a good form, however, enables us to detect flaws more readily. Professor Keyser: I call attention to an error in the two papers, namely, that Euclidean geometry agrees with experience better than

non-Euclidean. Both "agree" with experience; but Euclidean geometry has proved more convenient so far.

In the afternoon Professor De Laguna examined the "Externality of Relations" in three different aspects. It has its origin in the distinction of *essence* and *accidents*, as the latter are either non-essential qualities or *relations*. Externality of relations means here "external to the essence," *i. e.*, to the defining attributes. The validity of this distinction depends therefore on the possibility of "adequate definition." If anywhere, this must be possible in mathematics. But here this theory of the externality of relations is unsound, because the meaning of its indefinables is determined only by their relations to each other in the axioms, just as the meaning of words is determined by their connections, their relations to each other. But the externality of relations may be conceived also as "externality to qualities," whether essential or not. Here no precise decision is possible, because the distinction itself is not precise. Lastly, we may understand the externality of relations as meaning independence of relations from each other. In this sense it is, at least in part, decidedly wrong. And we have no reason for assuming that the relations in which an object stands form distinct groups each of which is independent of the rest.

Professor Cohen followed with his paper on "The Present Situation in the Philosophy of Mathematics." Starting from the customary view that mathematics is a deductive science, we are struck by the so-called "problem of the New," namely: how can mathematics genuinely extend our knowledge? The fact itself admits of no doubt; the question can therefore merely be: how can it be accounted for? He examined the empiricist explanation that the axioms are the result of experience; Kant's appeal to "pure intuition"; and Poincaré's recent attempt to mark out the method of "mathematical induction" as the fountain of the "New." None of these seemed to Professor Cohen capable of accounting for the fact of the "New." In his own attempt at solution he pointed out (1) that mathematical reasoning is not confined to the syllogism; (2) that the syllogism is not reducible to mere identity. He then discussed the problem of the objective validity of mathematics. Again, the fact itself admits of no doubt; the problem is to account for it. He discussed in turn the answer of empiricism, of transcendental idealism, and of pragmatism. He maintained that the assumption of the mental nature of mathematical entities is based on the erroneous notion that the particular alone has existence. On the contrary, it seems necessary to assume also the existence of universals, though they can not be localized in space, and though their mode of existence may be different from that of particulars. Dr. Schmidt: I agree with Professor Cohen

in urging the problem of the "New" and with his criticism of the usual attempts to account for it. I doubt, however, whether Professor Cohen has himself succeeded in giving a satisfactory solution. The main importance of the problem lies, to my mind, in the indication it gives that something is wrong with our ordinary conception of a deductive system. Professor Lovejoy: The New is only apparently existent in a deductive system. In the syllogism we must already have established the conclusion "Socrates is mortal" in order to be able to start with "All men are mortal." Dr. Schmidt: This may be admitted in this particular syllogism; but it only proves that Socrates might now be excused from serving in the same old example. Better examples would make it evident that Professor Lovejoy's view is not correct.

Professor Keyser's paper on "The Asymmetry of Imagination" required some knowledge of mathematics. Let

$$E \equiv u_1x_1 + u_2x_2 + \cdots + u_nx_n + 1$$

where u_k and x_k are real numbers. Then $E=0$ is a symmetrical equation. We will give to the x 's and u 's different interpretations. Starting with the equation

$$u_1x_1 + u_2x_2 + 1 = 0,$$

let x_1, x_2 be the coordinates of a *point* in Cartesian coordinates. Then the equation will represent a straight line. We shall call this straight line the image, $I(u)$, corresponding to the concept, $T(u)$, namely, the equation. But we may also give the u 's a definite meaning; let us understand by them the coordinates of a *line*; then our equation will represent a point, formed by the intersection of an infinity of straight lines. We will call this the $I(x)$ corresponding to the $T(x)$. As x and u are interchangeable, we have perfect symmetry in the equation which holds good in the image. This still obtains when we treat the equation

$$u_1x_1 + u_2x_2 + u_3x_3 + 1 = 0$$

correspondingly. But in

$$u_1x_1 + u_2x_2 + u_3x_3 + u_4x_4 + 1 = 0$$

the corresponding images $I(u)$ and $I(x)$ lose their symmetry: $I(u)$ can still be imagined; but $I(x)$ can not. We discover thus a certain asymmetry of the imagination, whilst thought still remains perfectly symmetrical. Professor Sheldon: This corroborates the results obtained recently by some German psychologists, namely, that thought and imagination are totally different. It opens up a novel method of treating the problem of the *a priori*. If these re-

sults are correct, they ought to alter our methods of philosophizing. We have tried to cling to the concrete. Now it must be urged: don't think in concrete terms; let thought have free play. Miss Calkins: You may be as concrete (*i. e.*, individual) as ever; but you must let the relational have its place as well as the sensational.

On Thursday morning Professor Britain spoke of "The Logical Value of the Genetic Explanation." He distinguished two types of valuation, the one exact, capable of being agreed upon, the other inexact, not subject to common agreement. The "standard of explanation" was taken to be of the second type. "The perfect explanation, implying as it does the ultimate solution of both the ontological and cosmological problems, is a task too stupendous for human intelligence. And yet it stands logically as the only perfect form of explanation, though forever undefined, real though never realized." With this ideal of explanation before him, Professor Britain rebelled against scientific procedure which definitely limits its problems in order to arrive at definite solutions. And on it is based his criticism of the genetic method. As an internal criticism of the genetic method Professor Britain pointed out that "it has no definite starting-point, covers no stated period, nor can it assign any reason why these should be as they are rather than otherwise." Professor Gore: The remedy for this, it would seem, is: *more* genetic method. Professor Lovejoy: Professor Britain's ideal of explanation is hazy and would exclude the only kind of explanation of which we have any definite knowledge, namely, the scientific. Professor Cohen: Professor Britain has indicated some at least of the arbitrary presuppositions of the genetic method.

Professor Sheldon's paper showed, in definite instances, the effect of two "Ideals of Philosophic Thought" in determining the reasoning of those who hold them. He called them the "aristocratic" and the "democratic" ideal. They are mostly latent in philosophic discussions, beyond proof or refutation, and whilst not really contradictory to each other, they determine opposing views in those who hold them, and are consequently a source of perennial quarrels. The first, held by Bradley and others, takes reality to be something deeper or higher than common, every-day experience; it postulates ultimate principles to which experience-content must conform to attain the dignity of reality. Two of these principles are: (1) that everything must be grounded in everything else, *i. e.*, the principle of sufficient reason; (2) that every term is simply itself and nothing else, *i. e.*, the principle of identity. The second ideal (of which Dewey and James are representatives, also Betrand Russell) takes reality as that which is directly present here and now, and regards that which is beyond such concrete verification as ghostly and illusory. It denies any

ultimate principles except those directly useful in attaining results here and now. Professor Norman Smith: There is no cleavage between two parties such as Professor Sheldon represents; both realists and idealists rely on logic and on fact. Bradley is not a representative of idealism; he stands by himself, a scholastic in modern times, a student neither of the history of philosophy nor of science. Professor Urban: There are certain presuppositions which underlie both realism and idealism, which are not logical, and which can best be called values. Idealism has made great advances since it recognized value as a fundamental idea, as Münsterberg did. Dr. Schmidt: Two important points of method seem to have come to light during this meeting; one is the fundamental rôle of the concept problem which limits the validity of our fundamental assumptions; the other is the necessity of determining an ideal of philosophic thought, as this will determine the solutions of our philosophic problems. Here lies the great value of Professor Sheldon's paper, in that he has shown in definite examples just this determining effect of two ideals. Professor Spaulding: I do not admit Dr. Schmidt's contention that the validity of our fundamental propositions is limited by our problems. It is a significant fact that all philosophical systems are stated in the form of propositions. Dr. Schmidt: I agree with this, and it is significant; but it does not invalidate my statement.

Professor Singer's paper, "Mind as an Object of Observation" criticized the "analogy argument" for the existence of a mind in other bodies: it assumes wrongly that our mind is directly known only to ourselves, it is invalid as an inference from a single case, and the hypothesis of other minds refers to the "jenseits" of things that make a difference. It fundamentally misconceives "mind" as something which is to be added to the body, an eject. This is brought out by the example of an "automatic sweetheart" invented by James. James's shrinking from accepting here the consequences of his own pragmatic method proves disappointing. The difference between soul and no-soul is merely a question of the fuller or poorer experience. "Our belief in consciousness is an expectation of probable behavior based on an observation of actual behavior." This recognition of consciousness as behavior provides a definite method for finding out what consciousness means, even though it is impossible to know surely what aspect of the behavior of certain objects leads us to call them conscious. Professor Singer finds one root of the analogy argument in the (erroneous) assumption of English sensationalism, namely, that "I am immediately possessed of certain data, recognizable and namable each by itself." "The beginning of our epistemological building is not a datum which might be known

by itself, . . . but just any point at which it occurs to us to ask ourselves: What is it you know, and how do you know it?" A second, and still deeper, root of the wrong conception of a soul presupposed by the analogy argument he finds in the "instinct for adding." As a primitive physical science added to a body another called heat to produce the hot body, so we add to a body another, called soul, to make it a live body, we compose a real sweetheart out of an automatic sweetheart plus an eject. Physical science has outgrown this stage. Soul is still considered a mystery by philosophers. "Is it not time to recognize the meaninglessness of the mystery?" Professor Ormond took exception to Professor Singer's view of life.

In the concluding paper of the meeting, "Some Problems confronting the Intellectualist," Professor Shaw showed the historical development of activism and its effect on intellectualism. This influence concerns the framing of the problem of reality and the formulation of the doctrine of truth. Starting with the distinction between appearance and reality, Professor Shaw showed that the intellectualist may conceive of being as that which appears and acts; "being is expected to exist *in sensu, in actu, et in re.*" The Lockean formula should be modified so as to read: *nihil est in intellectu quod non ante fuerit in actu.* This theory of reality finds support on the psychological side in Wundt's theory of attention and in Judd's conception of "active behavior and conscious experience as complementary forms of the ego's existence." The new theory of truth emphasizes the rôle of human interest, whether, like Eucken, in the form of a "spiritual creativeness," or "along the path of instinct," where Bergson seeks truth. Professor Shaw pointed out dangers in this theory, but concluded that the intellectualist ought to admit that "there is truth in desire," as well as that there is "reality in activity."

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REVIEWS AND ABSTRACTS OF LITERATURE

Natural and Social Morals. CARVETH READ. London: Adam and Charles Black. 1909.

The title of this book is intended to be descriptive. Morality is natural to man "in the sense that it is necessary not merely to his existence, but to the development of all that is distinctively human." And morality is social because man, in respect both of his existence and his development, is essentially social. No exception can be taken to this contention, and it gives to the whole book a certain pertinence and liveliness that are lacking in many ethical treatises. But the author's other preliminary

contention, that his ethical system rests logically on the metaphysical system developed in his "Metaphysics of Nature," is more questionable. Apparently the only application that Professor Read makes of his idealistic metaphysics is the inference that because "science is the interpretation of the world according to the principle of causality," it follows that "if morality is to be scientifically treated, it must be brought under the principle of causality." But this inference, barring the contention that the principle of causality somehow depends upon the "nature of the human mind," is not idealistic doctrine at all. The idealistic motive in modern ethics appears rather in the tendency to distinguish moral judgments from scientific judgments through setting up a dualism between "appreciation" and "description," or the "normative" and the "factual." And no one has repudiated such a dualism more explicitly than has Professor Read. Thus he says: Moral science differs from the natural sciences "not in the quality of its laws but in the limitation of its scope by the end in view" (p. 95). And again: "Moral science is not a system of rules, but a science of the tendencies of actions: which being known, every one must judge what he ought to do" (p. 99). Such assertions as these bring Professor Read into agreement, not with idealists like Green, Bradley, and Mackenzie, but with realists like G. E. Moore, in whose "Principia Ethica" we read that the question, What ought we to do, "introduces into ethics . . . the question what things are related as *causes* to that which is good in itself; and this question can only be answered by . . . the method of empirical investigation; by means of which causes are discovered in the other sciences" (p. 146).

Where virtue and duty are construed in terms of the consequences or tendencies of actions, the concept of the good assumes fundamental importance. Here the author is in agreement with the tendency which dominates modern ethics, to construe goodness in terms of desire. But his account of the matter is on the whole confused and unsuccessful. In the first place, he argues that because the good is the object of desire it must therefore consist in some "experience." Now accepting the necessary connection between desire and goodness, goodness may be defined either as that which satisfies desire, or as the satisfaction itself. But it is impossible to identify the two and assert that a desire is satisfied by its own satisfaction. And if the good is that which satisfies desire, then there is no proof that it need be experience; while if the good is the satisfaction of desire, then it is inaccurate to identify goodness with the object of desire. But this is perhaps more a matter of clearness than of doctrine. A more serious difficulty arises in connection with the account of the "chief good," which is the basal conception of the whole system. The author nowhere analyzes this conception, and he does not appear to recognize that because it predicates some kind of quantitative maximum of the generic goodness already defined, it must derive its exact meaning from the category of quantity which is employed. Everything, in other words, turns upon the term "chief," which the author uses with the naïveté of common sense. He assumes, apparently, that if the good is the desired, the chief good is the most desired; or that the chief good is what is pre-

ferred. The difficulty, of course, lies in the fact that a great many different and contradictory things are preferred, so that we are nowhere afforded any ground upon which to establish a true judgment in the matter. Professor Read does not even employ the ordinary idealistic device of referring to an absolute judgment. Were he to do so, we should as moralists be compelled to ask for the grounds of such a judgment, and should not be at all interested in it as a metaphysical or epistemological hypothesis. And Professor Read must at least be credited with avoiding irrelevant issues, even though he fails to solve the problem; but that he does fail, can scarcely be denied. We are told of some of the things which men have thought to be the chief good, "namely happiness, perfection, virtue, the beauty of holiness and wisdom"; and it is suggested that the best term under which to comprise them all ("if one term must be chosen") is "philosophy or culture." But why the author should feel compelled to choose one term when he has not succeeded in discovering a single conception, does not appear. We are left at the end without the slightest idea of what the author is really looking for, or where he expects such a thing to be found. The whole discussion rests upon a vague appeal to the actual preferences of men, in other words, to opinion; and is easily convertible into the crudest relativism. Against the relativism of Westermarck he feels it necessary to protest, "as the alternative to abandoning moral philosophy" (p. 129). But what does it profit moral philosophy to save the subordinate conception of virtue or right action from the taint of subjectivity, unless it be possible to establish the principal conception of goodness upon objective grounds?

Doubtless it is Professor Read's failure to recognize the seriousness of the logical problem that leads him to speak so slightly of Kant, as one who identifies "duty with the command of an abstract Prussian drill-sergeant" (p. 54); and to dismiss the term "ought" as unanalyzable "because it is empty" (p. 57). He is entirely correct in distinguishing the "feeling and impulse" of duty from the rational conviction of duty, and in charging tradition with confusing the two. But Professor Read seems scarcely to understand that Kant and others have been brought to their excessive formalism by their painstaking treatment of a matter that he himself glosses over. If moral scepticism is to be avoided it is necessary that moral experience should somehow be enabled to escape the limits of the individual consciousness; it is necessary that the fundamental judgment in moral matters should partake of the logical virtue of objective truth. And Kant's notion of a "practical reason," artificial and needless though it doubtless is, can scarcely be dismissed by one who has nothing better to put in its place than composite opinion.

Nearly two-thirds of the book is devoted to the discussion of custom, the family, the state, religion, and art. These chapters are interestingly written, and contain an abundance of information and sound critical comment. A pessimistic tone pervades them all, and this is most pronounced in the last chapter, which he significantly terms "moral degeneracy," rather than "progress." Professor Read is evidently an individualist who is somewhat out of sympathy with an age in which men habitually look to

the state for succor. But he is not bitter, nor is he over-positive. Indeed the author's willingness to leave important matters unsettled, to accumulate evidence without striking a balance, and to offer opinions without proof, is at once the principal defect and the principal merit of the book. It is not to be compared with such a book as Moore's "*Principia Ethica*" in logical rigor, nor with such a book as Simmel's "*Einleitung*" in refinement of analysis, nor with such a book as Rashdall's "*Theory of Good and Evil*" in systematic arrangement and completeness. But, on the other hand, it surpasses all of these books not only in style, but in the trenchancy and aptness of its criticism of life. Its very inadequacy as a treatise in theoretical ethics may have something to do with its success as an "endeavor to study morals as matter of fact and experience, instead of merely worrying the traditionary abstract ideas in the fashion of a scholastic age" (p. xi).

RALPH BARTON PERRY.

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Le cycle mystique: la divinité, origine et fin des existences individuelles dans la philosophie antésocratique. AUGUSTE DIÈS. Paris: Felix Alcan. 1909. Pp. 115.

The volume under notice belongs to the series "Collection historique des grands philosophes." It falls into two parts, of which the first considers the religious origins of the conception of deity as source and goal of all existences. In two chapters M. Diès treats (1) of the "classical" religion, that is, the religion of classic Greek literature beginning with Homer, or what is more familiarly known as the Olympian religion, and (2) of the primitive religion, of which the Dionysiac and Orphic cults are survivals or revivals. These chapters are extremely well done, presenting in brief compass probably as satisfactory a statement of Greek religion before the Hellenistic period as may anywhere be found. There are points, to be sure, at which the student of Greek religion will hesitate to adopt the views of M. Diès, as when he regards Homeric religion as essentially a religion of art, and explains the flexibility of fate (p. 10) and the tendency of the epic to portray the gods as of like passions with ourselves (p. 11), as due to the exigencies of art. One may gladly recognize that without such conceptions the Homeric epic, as we know it, would have been impossible; but that would be quite another thing from admitting that such considerations begot the conceptions in question. These are but two of a number of similar points; but they do not greatly detract from one's favorable judgment of the presentation as a whole.

The chapters of the second part, which deal with the teachings of the pre-Socratic philosophers touching this view of the world, are rather perfunctory, excepting that in which M. Diès treats of Empedocles. Xenophanes and Heraclitus might perhaps be included in this exception, but only if one takes a narrow view of the theme. The chief shortcoming of the thesis is that the author did not perceive that, in the last resort, he was dealing with the large question of the "one and the many." If

he perceived it, he skirted the question to the prejudice of his thesis. It would be easy to show that different statements are quite contradictory, possibly because in this part of his discussion he relied too much on M. Rivaud.

M. Diès is most suggestive in his treatment of Empedocles. The necessary limits of this review do not admit of a detailed criticism of his view, though the task were worthy of the pains. The strength of his account lies in the attempt to relate the physical philosophy and the religious teachings of Empedocles. There is undoubtedly a relation; but, unless I am in error, the relation is not so much logical, as M. Diès seems to think, as psychological. The connection is due to the fact that both dwelt together in one and the same brain, and that in the main it was the religious doctrine, accepted as a definitive truth, which served as a basis for the associative coordination of ideas, however little Empedocles may himself have been aware of it. I have indicated elsewhere (*"Die Bekehrung im klassischen Altertum,"* p. 4, n. 14) my belief that it was the Orphic conception of the soul that suggested the Empedoclean "element." As a matter of fact, the two conceptions are quite closely parallel, as M. Diès seems to perceive; but he is quite in error as to the precise theory of Empedocles in both spheres. On the one hand, he regards the soul in the teaching of Empedocles as "ephemeral groups of elements" (pp. 96 and 99), that is to say, as composite, for which view there is not a shred of evidence. The soul preexists before birth, and survives death; it is essentially an atomic, elemental substance which enters into a passing union with the "elements." After the dissolution of this temporary union, it either enters successively into other similar unions, or, after a great year, enters into a union with the gods, which are elemental souls, essentially like the human. In neither case does it lose its identity: it becomes a god, not *God*. The union with the gods is a "republic of souls," not an absorption into a Parmenidean one. In other words, Empedocles's view of the world of souls is fundamentally pluralistic. On the other hand, the union of the "elements" in the "sphere of love" is not, as M. Diès would have us suppose, an absorption into a Parmenidean one or a qualitative indeterminate. This, I believe, I have elsewhere (*"Qualitative Change in Pre-Socratic Philosophy,"* pp. 366-7; *Περὶ Φύσεως*, p. 103, n. 92) clearly shown.

M. Diès, like most interpreters of early Greek philosophy, errs in pressing overmuch the notion of unity. There can be no doubt that "unity" nowhere implies complete homogeneity before the time of Parmenides, and that the exigencies of natural philosophy, if not the persistence of lax definition of thought, led subsequent philosophers also to recede from the extreme logical position of Parmenides, which necessarily resolved itself into nihilism.

M. Diès is right in seeking an explanation of Greek philosophy in Greek religion, especially in notions embodied in primitive religion. It was there that the concepts of man first took definite shape and longest continued to exert their influence, because of the peculiar conservatism of religion; but we must look for these concepts not in the large sys-

tematic formulations of belief, but rather in details. This task still awaits the patient study of competent scholars; and there is no field more fruitful for the historian of thought.

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JOURNALS AND NEW BOOKS

MIND. July, 1910. *The Psychological Explanation of the Development of the Perception of External Objects* (I.) (pp. 305-321): H. W. B. JOSEPH. - Criticizes the doctrine of Professor Stout, as expounded in his "Groundwork of Psychology," Chapter IX., that we know an external world and that we gain this knowledge by a process psychologically traceable, in which we start from experiences merely of our own sensations. The theory fails to account for cognition of spatial relations. Discussion of cognition of external reality reserved for next installment. *The Cardinal Principle of Idealism* (pp. 322-336): R. B. PERRY. - Idealism, in its current technical sense, is a distinctively modern movement. True religion had to be defended against the claim of science to have alienated the world from man. Kant's "revolution" was a counter revolution through which the spectator again became the center of the system. The burden of idealism is a religious interpretation of nature, and its cardinal principle is that knowledge is a creative process. This is a fallacious inference from "the ego-centric predicament," or the circumstance that anything that is known or referred to is something known or referred to, and can not be at the same time unknown and unreferred to. The idealistic induction proceeds wholly by the method of agreement, because "the ego-centric predicament" forbids the use of the method of difference. "It is impossible to observe cases of unobserved things, even if there be any. But where this is the case, the method of agreement is worthless and the use of it is a fallacy." *Linguistic Misunderstandings* (pp. 337-355): HUGH MACCOLL. - Second installment. Perplexities that attach to the ideas the infinite and the finite are removed by letting the sign for equality signify "virtual equality" ($X = X + dx$) as well as absolute equality. Problems of matter and mind involve a conception of the soul. *The Sublime* (pp. 356-372): E. F. CARRITT. - A criticism of the theory of A. C. Bradley in his "Oxford Lectures on Poetry." Sublimity in the loose sense is beauty discovered in what bears a definitely hostile relation to our purposes or existence. Speaking strictly, only the absolute is sublime. Sublimity might be defined as the beauty of the absolute. *Discussions: Some Explanations in Reply to Mr. Bradley* (pp. 373-378): B. RUSSELL. - Mr. Bradley assumes a certain theory of relations and appeals to a sufficient reason. Mr. Russell defends external relations, and holds that a term may be related to itself ($2 + 2 = 4$). *Mr. Russell's Objections to Frege's Analysis of Propositions* (pp. 379-386): MISS E. E. C. JONES. - Frege's theory supplies an analysis of propositions of the form *S is P* which can be applied to all propositions of that form, and some theory of denotation which can be applied to all denotative terms. *Defi-*

nition in Symbolic Logic (pp. 387-389): A. T. SHEARMAN. — Seeks to elucidate the volitional character of definition, together with the position of definitions in reasoning, and the distinction to be drawn between definitions in symbolic logic and in philosophy. *Note on Aristotle's Theory of the Constructive Reason* (pp. 390-394): A. W. BENN. — Writer comments on a presumed error of himself and of Professor Adamson. Active reason is not to be identified with reason in act. Aristotle meant by "constructive reason" something equivalent to ego or self-conscious personality or rational self-consciousness. *Critical Notices*: August Messer, *Empfindung und Denken*: G. E. MOORE. Karl Joel, *Der Frei Wille*: C. S. MEYERS. James Sully, *The Teacher's Handbook of Psychology*: T. WHITTAKER. *New Books. Philosophical Periodicals. Note.*

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1910. *Voluntary Movement* (pp. 513-562) E. C. ROWE. — The author reports typewriting experiments, writing experiments, anatomical, physiological, and pathological data. The conclusion is drawn that "feeling is never the fundamental in a complex and highly voluntary activity." Voluntary movement differs from other kinds of movement in that it is essentially a form of control, which, in turn, means cognition. *An Experimental Study of Belief* (pp. 563-596): DR. OKABE. — Belief and its opposite are consciousnesses similar in nature. Belief and disbelief are more than mere acceptance, rejection, or emotional consciousness. Certainty-uncertainty are strongly affective, having a pleasant and unpleasant element, respectively. *A Preliminary Study of the Association-Reaction Consciousness* (pp. 597-602): R. L. GEISSLER. — A preliminary report of an introspective study of the "complex." The "complex" was found to be a group of ideas that are unpleasant. These ideas give a feeling of focal crowdedness soon to be followed by a single focal idea. *A Bibliography of the Scientific Writings of Wilhelm Wundt*: E. B. TITCHENER and L. R. GEISSLER. *William James—Commemorative Note. Subject Index and Names of Authors.*

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NOTES AND NEWS

At the meeting of the British Academy on January 18 Mr. Shadworth H. Hodgson read a paper on "Some Cardinal Points in Knowledge." Among the most prominent of these points were the following: that consciousness is the only evidence we have for anything whatever; that every empirically present moment of consciousness moves in two opposite directions of time at *once*, backwards into the past, and forwards into the future; that this circumstance compels us to distinguish between consciousness as a *knowing* (in which it is our evidence for everything) and the same consciousness as an *existent* (in which it is the dependent concomitant of some real condition or conditions, which are not consciousness); that the content of consciousness as a *knowing* is always found to be analyzable ultimately into distinguishable but inseparable elements, its so-called formal and material elements, time or time and space together being the formal, and some mode of feeling the material, while, taken as an *existent*, it appears as a self-objectifying process, having two aspects, the objective and the subjective; that physical matter is made known to us by the process of the simultaneous exercise of the sensations of sight and touch, including pressure, which gives us our first conception of reality in the full sense, namely, as a real condition of genesis; that physical matter, as known by sensations of touch with pressure, is a replica of the sensations by which it is known, which can not be said of any other sensation or feeling; that physical matter is at once the object and the real condition of genesis of new sensations, new not in respect of kind, but of occurrence, and the experience of physical matter is thus the point at which the physical world as known and our consciousness knowing it coincide, thus proving the latter to be true evidence of the former; that the nature of the specific qualities of sensation, *what*, for instance, sensations of touch, pressure, light, color, sound, heat, cold, pleasure, pain, and so on, *are*—this is incapable of being thought of as caused or conditioned by anything whatever; in their simplest shape they are *ultimates* in experience; they are a *revelation* in the strictest sense: that, since time or time and space together, which are their inseparable formal element, are infinite, that is, limitless in increase or decrease, we are compelled to admit the possibility of innumerable other modes of sensation than our own, and even of other kinds of formal elements than time and space,

though we can form no positive idea whatever of *what* such possible modes may be; that the specific qualities of emotion and desire of all kinds are ultimates of experience, in precisely the same sense and for the same reason as those of sensation; that religion springs from an emotional root, namely, the craving for the sympathy of some being who, besides being morally our superior, should also have a perfect knowledge of what we are and have been, such as can belong to no finite being who is separate from ourselves; and that, when thought is said to arrest the attention, the stream of consciousness, the content arrested, belongs to consciousness as a knowing, the thought which arrests it to consciousness as an existent. —*The Athenæum*.

SIR FRANCIS GALTON died in London on January 17. The following summary of his career is from *The Nation*: "He was born at Birmingham, England, February 16, 1822; was educated at King Edward's School, Birmingham, the Medical School of King's College, London, and at Trinity College, London, where he graduated in 1844. Two years after his graduation, he set out for the Upper Nile, which at that time was almost unexplored. He went far beyond the temples and upper cataracts, penetrating to the Sudan. The interest which this journey awakened in England and the enthusiasm which it quickened in the young explorer induced him to undertake exploration in South Africa. In company with J. C. Anderson, he landed an expedition at Walfisch Bay in August, 1850, and was engaged in exploring Damaraland, now German Southwest Africa, until January, 1852. This expedition was fertile in discoveries. He came upon the Ovampo race, a partly civilized agricultural people, and reported for the first time upon the whole region lying between Lake Ngami and the seacoast and 18 minutes 23 seconds south latitude. He soon turned his attention to meteorology, and devised methods which served as the basis of our present weather maps. He propounded the theory of anticyclones, which underlies the present system of weather forecasting, and at various times put out inventions having to do with meteorologic reckoning. He became expert in handling statistics, and the facility which he so derived he put into practise in his subsequent anthropological studies; he invented a system of composite portraiture and various means of psychological measurement. In a paper which appeared in the Proceedings of the Royal Society on 'The Law of Ancestral Inheritance,' he undertook to place the study of heredity on a quantitative footing. He was a consulting editor of *Biometrika* since 1902, and continued to write almost up to the present. Latterly he gave himself somewhat to the study of eugenics. In 1905 he established a laboratory for that purpose at University College, under the authority of the University of London. His works include: 'Tropical South Africa,' 'Art of Travel,' 'Meteorographica,' 'Hereditary Genius,' 'Human Faculty,' 'Natural Inheritance,' 'Finger Prints,' 'Finger-print Directory,' and 'Memoirs of My Life.'"

THOSE mathematicians and physicists who experience difficulty in forming a clear mental picture of the concepts of non-Euclidean geometry

will find a useful and suggestive paper on the Bolyai-Lobatschewsky system, by Professor H. S. Carslaw, in the Proceedings of the Edinburgh Mathematical Society, XXVIII. (1910). The author starts by showing how the properties of planes and straight lines in ordinary space can be extended by inversion to spheres and circles through a fixed point. He then proceeds to consider the properties of spheres and circles that are orthogonal to a given fixed sphere, and shows that if these be called "ideal planes" and ideal lines, they will be found to possess properties exactly analogous to those of hyperbolic geometry. In the plane geometry thus established "ideal parallels" are represented by circles which touch on the fixed orthogonal circle, and thus it follows that through a given ideal point two parallels can be drawn to a given line. In short, Professor Carslaw shows that a geometry identical with that of Bolyai and Lobatschewsky can be built up in ordinary Euclidean space, and, so far as plane geometry is concerned, in an ordinary Euclidean plane. Unless some unforeseen fallacy in this investigation should be discovered which has escaped Professor Carslaw's notice, we have here a convincing proof that Euclid's parallel postulate is incapable of demonstration. In fact, it is argued that if any inconsistency existed in the Bolyai-Lobatschewsky postulate this inconsistency would be extended by Professor Carslaw's "ideal" system to Euclidean geometry. Do not these arguments point to the view that Euclid's postulate should be regarded as a property of matter rather than of space?—*Nature*.

UNDER the auspices of the departments of philosophy and psychology of Columbia University, a course of nine public lectures on "Problems of Psychology" was given at the university from January 31 to February 9. The lectures on the subject were as follows: "Measurement of Musical Capacity," Professor C. E. Seashore, University of Iowa; "Social Psychology," Professor Charles H. Judd, University of Chicago; "Memory and Imagination," Professor E. B. Titchener, Cornell University; "Frailties of Imageless Thought," Professor J. R. Angell, University of Chicago; "The Standpoint and Scope of Social Psychology," Professor Mary Whiton Calkins, Wellesley College; "The Psychology of Dream States," Professor Joseph Jastrow, University of Wisconsin; "The Rôle of the Type in Simple Mental Processes," Professor W. B. Pillsbury, University of Michigan; "The Ontological Problem of Psychology," Professor George T. Ladd, Yale University; "Some Psychological Topics Emphasized by Pragmatism," Professor Josiah Royce, Harvard University.

DR. LEONARD T. HOBHOUSE, professor of sociology in the University of London, has been appointed to the Beer lectureship in political science at Columbia University for this year. There are to be ten lectures on "Social Evolution and Political Theory" in March and April.

PROFESSOR IRVING KING, of the University of Iowa, will give two courses in education in the University of Wisconsin during the coming summer session.

THE Macmillan Company will publish shortly Bergson's "Creative Evolution," translated by Dr. Arthur Mitchell.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

RUSSELL'S PHILOSOPHICAL ESSAYS

II. THE CRITIQUE OF PRAGMATISM

THE time has not yet come when a just and synthetic account of what is called pragmatism can be expected of any man. The movement is still in a nebulous state, a state from which, perhaps, it is never destined to issue. The various tendencies that compose it may soon cease to appear together; each may detach itself and be lost in the earlier system with which it has most affinity. The reader will probably remember Professor Lovejoy's "Thirteen Pragmatisms"; and besides such distinguishable tenets, there are in pragmatism echoes of various popular moral forces, like democracy, impressionism, love of the concrete, respect for success, trust in will and action, and the habit of relying on the future, rather than on the past, to justify one's methods and opinions. Most of these things are characteristically American; and Mr. Russell touches on some of them with more wit than sympathy. Thus he writes: "The influence of democracy in promoting pragmatism is visible in almost every page of William James's writing. There is an impatience of authority, an unwillingness to condemn widespread prejudices, a tendency to decide philosophical questions by putting them to a vote, which contrast curiously with the usual dictatorial tone of philosophic writings. . . . A thing which simply *is* true, whether you like it or not, is to him as hateful as a Russian autocracy; he feels that he is escaping from a prison, made not by stone walls but by 'hard facts,' when he has humanized truth, and made it, like the police force in a democracy, the servant of the people instead of their master. The democratic temper pervades even the religion of the pragmatists; they have the religion they have chosen, and the traditional reverence is changed into satisfaction with their own handiwork. 'The prince of darkness,' James says, 'may be a gentleman, as we are told he is, but whatever the God of earth and heaven is, he can surely be no gentleman.' He is rather, we should say, conceived by pragmatists as an elected president, to whom we give a

respect which is really a tribute to the wisdom of our own choice. A government in which we have no voice is repugnant to the democratic temper. William James carries up to heaven the revolt of his New England ancestors: the Power to which we can yield respect must be a George Washington rather than a George III."

Many emotional impulses of this sort might be discovered in pragmatism; and yet what seems to be, at this moment, the dominant note, among those who have most felt the influence of the movement, is what is called the New Realism; and to something very like this, under the name of Radical Empiricism, Professor James himself seemed to turn in the end as to a haven after the storm. But this new realism is not a doctrine resting at all on vague moral aspirations. It is nothing if not positive, scientific, and (most unlike the earlier pragmatism) even materialistic and mathematical. What it chiefly inherits from pragmatism, however, is the determination to reduce ideal relations, such as that of knowing, to natural relations between dynamic processes. That such dynamic natural relations underlie knowing and all spiritual activity was surely the guiding insight of pragmatism, on its technical side; while the habit, most unfortunate, as it seems to me, of actually identifying these natural relations with the ideal ones in which they find conscious expression, has been the source of infinite confusion, both to pragmatists and to their opponents, and the ground of that decided rejection which the new doctrine has met with in almost every quarter.

It is not, however, in any general picture of pragmatism that Mr. Russell might draw that the value of his criticism would be likely to lie. He attempts no such picture; and his exact and spare way of philosophizing would hardly be suited to the task. That would require a delicate blending of historical perspectives and some faith in blundering, kindly, brave human nature. What Mr. Russell catches and dwells upon are certain high lights of pragmatic theory; and however inadequately these precise points, even when added together, may represent the movement, they are of interest in themselves, and what our critic has to say on them is keen and cogent and, to my mind, altogether final.

A point of fundamental importance, about which pragmatists have been far from clear, and perhaps not in agreement with one another, is the sense in which their psychology is to be taken. "The facts that fill the imaginations of pragmatists," Mr. Russell writes (p. 104), "are psychical facts; where others might think of the starry heavens, pragmatists think of the perception of the starry heavens; where others think of God, pragmatists think of the belief in God, and so on. In discussing the sciences, they never think, like scientific specialists, about the facts upon which scientific theories

are based; they think about the theories themselves. Thus their initial question and their habitual imaginative background are both psychological.' This is so true that unless we make the substitution into psychic terms instinctively, the whole pragmatic view of things will seem paradoxical, if not actually unthinkable. For instance, pragmatists might protest against the accusation that "they never think about the facts upon which scientific theories are based," for they lay a great emphasis on facts. Facts are the cash which the credit of theories hangs upon. Yet this protest, though sincere, would be inconclusive, and in the end it would illustrate Mr. Russell's observation, rather than refute it. For we should presently learn that these facts can be made by thinking, that our faith in them may contribute to their reality, and may modify their nature; in other words, these facts are our immediate apprehensions of fact, which it is indeed conceivable that our temperaments, expectations, and opinions should modify. Thus the pragmatist's reliance on facts does not carry him beyond the psychic sphere; his facts are only his personal experiences. Personal experiences may well be the basis for no less personal myths; but the effort of intelligence and of science is rather to find the basis of the personal experiences themselves; and this non-psychic basis of experience is what common sense calls the facts, and what practise is concerned with. Yet these are not the *pragmata* of the pragmatist, for it is only the despicable intellectualist that can arrive at them; and the bed-rock of facts that the pragmatist builds upon is avowedly drifting sand. Hence the odd expressions, new to literature and even to grammar, which bubble up continually in pragmatist writings. "For illustration take the former fact that the earth is flat,"¹ says one, quite innocently; and another observes that "two centuries later, nominalism was evidently true, because it alone would legitimize the local independence of cities."² Lest we should suppose that the historical sequence of these "truths" or illusions is, at least, fixed and irreversible, we are soon informed that the past is always changing, too; that is (if I may rationalize this mystical dictum), that history is always being rewritten, and that the growing present adds new relations to the past, which lead us to conceive or to describe it in some new fashion. Even if the ultimate inference is not drawn, and we are not told that this changing idea of the past is the only past that exists—the real past being unattainable and therefore, for personal idealism, non-existent—it is abundantly clear that the effort to distinguish fact from theory can not be successful, so long as the psychological way of thinking prevails; for a theory, psychologically

¹ "Studies in Logical Theory," edited by John Dewey, p. 106.

² This JOURNAL, Vol. IV., No. 24, p. 661.

considered, is a bare fact in the experience of the theorist, and the other facts of his experience are so many other momentary views, so many scant theories, to be immediately superseded by other "truths in the plural." Sensations and ideas are really distinguishable only by reference to what is assumed to lie without; of which external reality experience is always an effect (and in that capacity is called sensation) and often at the same time an apprehension (and in that capacity is called idea).

It is a crucial question, then, in the interpretation of pragmatism, whether the psychological point of view, undoubtedly prevalent in that school, is the only or the ultimate point of view which it admits. The habit of studying ideas rather than their objects might be simply a matter of emphasis or predilection. It might merely indicate a special interest in the life of reason, and be an effort, legitimate under any system of philosophy, to recount the stages by which human thought, developing in the bosom of nature, may have reached its present degree of articulation. I myself, for instance, like to look at things from this angle: not that I have ever doubted the reality of the natural world, or been able to take very seriously any philosophy that denied it, but precisely because, when we take the natural world for granted, it becomes a possible and enlightening inquiry to ask how the human animal has come to discover his real environment, in so far as he has done so, and what dreams have intervened or supervened in the course of his rational awakening. To the habit of studying in this way the tragi-comedy of cognitive experience, I probably owe the generous appreciation, somewhat disconcerting at times, with which some pragmatists have honored me, as well as the contempt or distrust my writings seem to inspire in other critics, who think me a confused babbler and a romanticist, because indeed I am more interested in the general imaginative life of mankind than in the few shreds of it that these same critics cherish as dogmas; for if they believed simply, as I do, in the natural world, they would not have misunderstood my intention. On the other hand, a psychological point of view might be equivalent to the idealistic doctrine that the articulation of human thought constitutes the only structure of the universe, and its whole history. This may be the position of Mr. Schiller, but hardly that of the other leaders of the pragmatist school. I remember Professor Dewey saying in conversation that he did not doubt that the mind of a friend of ours, *M*, existed independently of our ideas of *M*'s mind; but it was not for philosophy to discuss that independent being; the business of philosophy was merely to fix the logic and system of our own knowledge. According to this view, pragmatism would seem to be a revised version of the transcendental logic, leaving logic still tran-

scendental, that is, still concerned with the evolution of the categories. The revision would consist chiefly in this, that empirical verification, utility, and survival would take the place of dialectical irony as the force governing the evolution. It would still remain possible for other methods of approach than this transcendental pragmatism, for instinct, perhaps, or for revelation, to bring us into contact with things-in-themselves. A junction might thus be effected with the system of M. Bergson, which would lead to this curious result: that pragmatic logic would be the method of intelligence, because intelligence is merely a method, useful in practise, for the symbolic and improper representation of reality; while another non-pragmatic method—sympathy and dream—would alone be able to put us in possession of direct knowledge and genuine truth. So that, after all, the pragmatic “truth” of working ideas would turn out to be what it has seemed hitherto to mankind, namely, no real truth, but rather a convenient sort of fiction, which ceases to deceive when once its merely pragmatic value is discounted by criticism.

I remember, too, once putting a question on this subject to Professor James also; and his answer was one which I am glad to be able to record. In relation to his having said that “as far as the past facts go, there is no difference, . . . be the atoms or be the God their cause,”³ I asked whether, if God had been the cause, apart from the value of the idea of him in our calculations, his existence would not have made a difference to *him*, as he would be presumably self-conscious. “Of course,” said Professor James, “but I wasn’t considering that side of the matter; I was thinking of our idea.” The choice of the subjective point of view, then, was deliberate here, and frankly arbitrary; it was not intended to exclude the possibility or legitimacy of the objective attitude. And the original reason for deliberately ignoring, in this way, the realistic way of thinking, even while admitting (like Professor Dewey) that it represents the real state of affairs, would have been, I suppose, that what could be verified was always some further effect of the real objects, and never those real objects themselves; so that for interpreting and predicting our personal experience only the hypothesis of objects was pertinent, while the objects themselves, except as so represented, were useless and unattainable. The case, if I may adapt a comparison of Mr. Russell’s, was as if we possessed a catalogue of the library at Alexandria, all the books being lost forever; it would be only in the catalogue that we could practically verify their existence or character, though doubtless, by some idle flight of imagination, we might continue to think of the books, as well as of those titles in the catalogue which alone could appear to us in experience. Pragmatism, ap-

³ “Pragmatism,” p. 101.

proached from this side, would then seem to express an acute critical conscience, a sort of will not to believe; not to believe, I mean, more than is absolutely necessary for solipsistic practise.

Such economical faith, enabling one to dissolve the hard materialistic world into a work of mind, which mind might outflank, was traditional in the radical Emersonian circles in which pragmatism sprang up. It is one of the approaches to the movement; yet we may safely regard the ancestral transcendentalism of the pragmatists as something which they have turned their back upon, and mean to disown. It is destined to play no part in the ultimate result of pragmatism. This ultimate result promises to be, on the contrary, a direct and materialistic sort of realism. This alone is congruous with the scientific affinities of the school and its young-American temper. Nor is the transformation very hard to effect. The world of solipsistic practise, if you remove the romantic self that was supposed to evoke it, becomes at once the sensible world; and the problem is only to find a place in the mosaic of objects of sensation for those cognitive and moral functions which the soul was once supposed to exercise in the presence of an independent reality. But this problem is precisely the one that pragmatists boast they have already solved; for they have declared that consciousness does not exist, and that objects of sensation (which at first were called feelings, experiences, or "truths") know or mean one another when they lead to one another, when they are poles, so to speak, in the same vital circuit. The spiritual act which was supposed to take things for its object is to be turned into "objective spirit," that is, into dynamic relations between things. Rather than admit that the mind of *M* exists, but is beyond the reach of philosophy, this post-pragmatic theory will identify the mind of *M* with a material system consisting of *M*'s body and such surrounding objects as *M*'s body is reacting upon. The philosopher will deny that he has any other sort of mind himself, lest he should be shut up in it again, like a sceptical and disconsolate child; while if there threatens to be any covert or superfluous reality in the self-consciousness of God, nothing will be easier than to deny that God is self-conscious; for indeed, if there is no consciousness on earth, why should we imagine that there is any in heaven? The psychologism with which the pragmatists started seems to be passing in this way, in the very effort to formulate it pragmatically, into something which, whatever it may be, is certainly not psychologism. But the bewildered public may well ask whether it is pragmatism either.

There is another crucial point in pragmatism which the defenders of the system are apt to pass over lightly, but which Mr. Russell regards (justly, I think) as of decisive importance. Is, namely, the

pragmatic account of truth intended to cover all knowledge, or one kind of knowledge only? Apparently the most authoritative pragmatists admit that it covers one kind only; for there are two sorts of self-evidence in which, they say, it is not concerned: first, the dialectical relation between essences; and second, the known occurrence or experience of facts. There are obvious reasons why these two kinds of cognitions, so interesting to Mr. Russell, are not felt by pragmatists to constitute exceptions worth considering. Dialectical relations, they will say, are verbal only; that is, they define ideal objects, and certainty in these cases does not coerce existence, or touch contingent fact at all. On the other hand, such apprehension as seizes on some matter of fact, as for instance, "I feel pain," or "I expected to feel this pain, and it is now verifying my expectation," though often true propositions, are not *theoretical* truths; they are not, it is supposed, questionable beliefs but rather immediate observations. Many of these apprehensions of fact (or all, perhaps, if we examine them scrupulously) involve the veracity of memory, surely a highly questionable sort of truth; and, moreover, verification, the pragmatic test of truth, would be obviously impossible to apply, if the prophecy supposed to be verified were not assumed to be truly remembered. How shall we know that our expectation is fulfilled, if we do not know directly that we had such an expectation? But if we know our past experience directly—not merely knew it when present, but know now what it was, and how it has led down to the present—this amounts to enough knowledge to make up a tolerable system of the universe, without invoking pragmatic verification or "truth" at all. I have never been able to discover whether, by that perception of fact which is not "truth" but fact itself, pragmatists meant each human apprehension taken singly, or the whole series of these apprehensions. In the latter case, as in the philosophy of M. Bergson, all past reality might constantly lie open to retentive intuition, a form of knowledge soaring quite over the head of any pragmatic method or pragmatic "truth." It looks, indeed, as if the history of at least personal experience were commonly taken for granted by pragmatists, as a basis on which to rear their method. Their readiness to make so capital an assumption is a part of their heritage from romantic idealism. To the romantic idealist science and theology are tales which ought to be reduced to an empirical equivalent in his personal experience; but the tale of his personal experience itself is a sacred figment, the one precious conviction of the romantic heart, which it would be heartless to question. Yet here is a kind of assumed truth which can not be reduced to its pragmatic meaning, because it must be true literally in order that the pragmatic meaning of other beliefs may be conceived or tested at all.

Now, if it be admitted that the pragmatic theory of truth does not touch our knowledge either of matters of fact or of the necessary implications of ideas, the question arises: What sort of knowledge remains for pragmatic theory to apply to? Simply, Mr. Russell answers, those "working hypotheses" to which "prudent people give only a low degree of belief" (p. 147). For "we hold different beliefs with very different degrees of conviction. Some—such as the belief that I am sitting in a chair, or that $2 + 2 = 4$ —can be doubted by few except those who have had a long training in philosophy. Such beliefs are held so firmly that non-philosophers who deny them are put into lunatic asylums. Other beliefs, such as the facts of history, are held rather less firmly. . . . Beliefs about the future, as that the sun will rise to-morrow and that the trains will run approximately as in Bradshaw, may be held with almost as great conviction as beliefs about the past. Scientific laws are generally believed less firmly. . . . Philosophical beliefs, finally, will, with most people, take a still lower place, since the opposite beliefs of others can hardly fail to induce doubt. Belief, therefore, is a matter of degree. To speak of belief, disbelief, doubt, and suspense of judgment as the only possibilities is as if, from the writing on the thermometer, we were to suppose that blood heat, summer heat, temperate, and freezing were the only temperatures" (p. 145). Beliefs which require to be confirmed by future experience, or which actually refer to it, are evidently only presumptions; it is merely the truth of presumptions that empirical logic applies to, and only so long as they remain presumptions. Presumptions may be held with very different degrees of assurance, and yet be acted upon, in the absence of any strong counter-suggestion; as the confidence of lovers or of religious enthusiasts may be at blood heat at one moment and freezing at the next, without a change in anything save in the will to believe. The truth of such presumptions, whatever may be the ground of them, depends in fact on whether they are to lead (or, rather, whether the general course of events is to lead) to the further things presumed; for these things are what the presumptions refer to explicitly.

It sometimes happens, however, that presumptions (being based on voluminous blind instinct rather than on distinct repeated observations) are expressed in consciousness by some symbol or myth, as when a man says he believes in his luck; the presumption really regards particular future chances and throws of the dice, but the emotional and verbal mist in which the presumption is wrapped, veils the pragmatic burden of it; and a metaphysical entity arises, called luck, in which a man may think he believes rather than in a particular career that may be awaiting him. Now since this entity, luck, is a mere word, confidence in it, to be justi-

fied at all, must be transferred to the concrete facts it stands for. Faith in one's luck must be pragmatic, but simply because faith in such an entity is not needful nor philosophical at all. The case is the same with working hypotheses, when that is all they are; for on this point there is some confusion. Whether an idea is a working hypothesis merely or an anticipation of matters open to eventual inspection may not always be clear. Thus the atomic theory, in the sense in which most philosophers entertain it to-day, seems to be a working hypothesis only; for they do not seriously believe that there are atoms, but in their ignorance of the precise composition of matter, they find it convenient to speak of it as if it were composed of indestructible particles. But for Democritus and for many modern men of science the atomic theory is not a working hypothesis merely; they do not regard it as a provisional makeshift; they regard it as a probable, if not a certain, anticipation of what inspection would discover to be the fact, could inspection be carried so far; in other words, they believe the atomic theory is true. If they are right, the validity of this theory would not be that of pragmatic "truth" but of pragmatic "fact"; for it would be a view, such as memory or intuition or sensation might give us, of experienced objects in their experienced relations; it would be the communication to us, in a momentary dream, of what would be the experience of a universal observer. It would be knowledge of reality in M. Bergson's sense. Pragmatic "truth," on the contrary, is the relative and provisional justification of fiction; and pragmatism is not a theory of truth at all, but a theory of theory, when theory is instrumental. For theory has more than one signification. It may mean such a symbolic or foreshortened view, such a working hypothesis, as true and full knowledge might supersede; or it may mean this true and full knowledge itself, a synthetic survey of objects of experience in their experimental character. Algebra and language are theoretical in the first sense, as when a man believes in his luck; historical and scientific imagination are theoretical in the second sense, when they gather objects of experience together without distorting them. But it is only to the first sort of theory that pragmatism can be reasonably applied; to apply it also to the second would be to retire into that extreme subjectivism which the leading pragmatists have so hotly disclaimed. We find, accordingly, that it is only when a theory is avowedly unreal, and does not ask to be believed, that the value of it is pragmatic; since in that case belief passes consciously from the symbols used to the eventual facts in which the symbolism terminates, and for which it stands.

It may seem strange that a definition of truth should have been based on the consideration of those ideas exclusively for which truth

is not claimed by any critical person, such ideas, namely, as religious myths or the graphic and verbal machinery of science. Yet the fact is patent, and if we considered the matter historically it might not prove inexplicable. Theology has long applied the name truth preeminently to fiction. When the conviction first dawned upon pragmatists that there was no absolute or eternal truth, what they evidently were thinking of was that it is folly, in this changing world, to pledge oneself to any final and inflexible creed. The pursuit of truth, since nothing better was possible, was to be accepted instead of the possession of it. But it is characteristic of Protestantism that, when it gives up anything, it transfers to what remains the unction, and often the name, proper to what it has abandoned. So, if truth was no longer to be claimed or even hoped for, the value and the name of truth could be instinctively transferred to what was to take its place—spontaneous, honest, variable conviction. And the sanctions of this conviction were to be looked for, not in the objective reality, since it was an idle illusion to fancy we could get at that, but in the growth of this conviction itself, and in the prosperous adventure of the whole soul, so courageous in its self-trust, and so modest in its dogmas. Science, too, has often been identified, not with the knowledge men of science possess, but with the language they use. If science meant knowledge, the science of Darwin, for instance, would lie in his observations of plants and animals, and in his thoughts about the probable ancestors of the human race—all knowledge of actual or possible facts. It would not be knowledge of “selection” or of “spontaneous variation,” terms which are mere verbal bridges over the gaps in that knowledge, and mark the *lacunæ* and unsolved problems of the science. Yet it is just such terms that seem to clothe “Science” in its pontifical garb; the cowl is taken for the monk; and when a penetrating critic, like M. Henri Poincaré, turns his subtle irony upon them, the public cries that he has announced the “bankruptcy of science,” whereas it is merely the language of science that he has reduced to its pragmatic value—to convenience and economy in the registering of facts—and has by no means questioned that positive and cumulative knowledge of facts which science is attaining. It is an incident in the same general confusion that a critical epistemology, like pragmatism, analyzing these figments of scientific or theological theory, should innocently suppose that it was analyzing “truth”; while the only view to which it really attributes truth is its view of the system of facts open to possible experience, a system which those figments presuppose and which they may help us in part to supply, where it is accidentally hidden from human inspection.

Mr. Russell, with the candor and courage that distinguish him,

has not wished to aim these and similar cruel shafts at the pragmatist without exposing himself in turn to attack, and his book closes with a brief but complicated essay "On the Nature of Truth." In asserting the truth or falsity of any opinion, it is assumed that the force of the predicates "true" and "false" is perfectly well known; but what is the force of these predicates? Mr. Russell begins his reply by agreeing with Professor James on the point that truth should be predicated of beliefs, not of things. "When, for example, we see the sun shining, the sun itself is not 'true,' but the judgment 'the sun is shining' is true" (p. 172). Thus "it is plain that there can be no truth or falsehood unless there are minds to judge. Nevertheless it is plain, also, that the truth or falsehood of a given judgment depends in no way upon the person judging, but solely upon the facts about which he judges." Were there no false judgments it would be plausible, Mr. Russell thinks, to assume a true "objective," that is, an objective truth, which the true judgment asserts; but it is not possible to admit false "objectives" to match, and, as false judgments assert something, the theory of true "objectives" for truths must be abandoned. Instead we may postulate a number of objective terms, standing in some objective relation to one another; and a true judgment will be one that assigns to those several terms the relation in which they actually stand. "Every judgment is a relation of a mind to several objects, one of which is a relation; the judgment is true when the relation which is one of the objects relates the other objects, otherwise it is false" (p. 181). And we learn subsequently that this relation must not be conceived too abstractly, so as to be reversible; it may hold in one direction only, and that direction must, in that case, be specified in the true judgment.

I confess to some surprise that Mr. Russell should admit that there can be no truth unless there are minds. When one holds that ideal essences and facts and the relations between them are all independent of the judging mind, it seems unnatural to assert that this existing standard for true judgments is not itself the truth. Of course truth is not synonymous with reality; but "the truth," as I apprehend the force of that phrase, means the form of reality, or the complex of all those possible judgments which the reality justifies. This complex of possible true judgments would be determined by the reality whether any one ever pronounced any of those judgments or not; so that it would be, at the very most, possible minds, and not actual minds, that would be involved in the being of truth. Nor does the difficulty about "objectives" for error, which Mr. Russell puts forward, seem to me very serious. The content, or the esthetic essence, envisaged in a false judgment is one thing, and the

external object, or the complex of necessary relations, in which that essence is alleged to lie, is quite another. The form of reality is the standard for errors as well as for truths; if error did not mean to describe reality it would not be error, but mere imagination. The "objective" which a false judgment requires, so that it may assert something, is its own content or esthetic essence; the "objective" which it requires, so that it may be true or false, is the truth outside. I may not have fully understood Mr. Russell's argument, which is very concise; but the conclusion at which he arrives, that false judgments must have complex objects, seems certain on other grounds. If reality had no multiplicity we should either have to apprehend it truly or not to refer to it at all. What exposes us to err is that we may conceive one element of reality, fixing upon it by some sign that determines it sufficiently, and then combine with it other elements which are not conjoined with it in fact.

Perhaps some of the difficulties which meet Mr. Russell here may be due to another tenet of his, which itself seems very questionable, namely, that perception, as distinguished from judgments based upon it, is infallible. If we subtract the accompanying judgments from perception, however, what remains would not appear to be still a judgment; it would be merely an essence presented; and why need the sense-datum, or esthetic essence, which perception presents, have any further embodiment in the universe? Doubtless, there are no perceptions without a material cause, as there can be none without an esthetic essence; but it is a long way round—the whole long circuit of human disillusion and science—from the first esthetic essence, perceived in a dream, to the ultimate knowledge of what may have been its cosmic causes. Professor James used to exclaim, when he was startled by some fresh and unlooked-for misunderstanding, that you could say nothing safely in philosophy unless you said everything; and I suspect that these obscure points in Mr. Russell's doctrine will be made clearer when he has given us his views on the material world, and on psychology; for there are hints in his writings, and in Mr. Moore's, of a new realism with an atomic migratory soul, genuine matter, and secondary qualities subsisting independently in objects; a system which promises to be no less interesting than the new realism already launched in America, and possibly more complete.

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SOCIETIES

NEW YORK BRANCH OF THE AMERICAN
PSYCHOLOGICAL ASSOCIATION

A JOINT meeting with the Section of Anthropology and Psychology of the New York Academy of Sciences was held on November 28, 1910, with an afternoon session at the psychological laboratory of Columbia University and an evening session at the American Museum of Natural History. Between these sessions, an informal dinner was held at the Faculty Club of Columbia University. The New York Branch, in the hope of having an unusually large attendance and participation at its next or mid-winter meeting, voted to refer the date and management of this meeting to the executive committee with power. (February 3-4 was set as the date of this meeting.)

The Section of Anthropology and Psychology of the New York Academy of Sciences voted to submit to the council of the Academy the following nominations for sectional officers for the year 1911: for vice-president and chairman, Professor R. S. Woodworth; for secretary, Dr. F. Lyman Wells. (These nominations have since been confirmed.) The section also voted to recommend to the favorable consideration of the council the application of Professor C. C. Trowbridge for a grant from the Herrmann Research Fund for assistance in a study of the migrations of birds. (This grant has since been allowed by the council.)

The following scientific program was presented:

Practise Effects in Free Association: F. LYMAN WELLS.

When subjects are practised in the free association test through a long series of different words each day, there normally appears a decrease in the association time that may be as high as forty per cent. This practise effect consists essentially in bringing down the long times of a series to the approximate level of the few words showing the shortest time at the beginning of practise. It is an overcoming of the resistances originally present in the majority of responses. It is very striking that the practise effect of this test, where the given situation is essentially different in each observation, is not markedly less than in other psychological tests where the situations are the same or but slightly different, as in the addition or the number checking tests. Besides this practise effect in the reaction time, it also appears that there are certain changes in the character of the responses; they tend to become more specific, but also more superficial, and less determined by the influence of so-called emotional "complexes."

Drowsiness: H. L. HOLLINGWORTH.

This paper reports an attempt to study the hitherto inadequately explored transition state between waking and sleeping. Two observers have for two years recorded hallucinations occurring during the drowsy state, and typical cases are reported. Their examination discloses several clearly-defined principles or tendencies, the exposition of which seems to constitute a fairly true though perhaps only partially complete analysis of the state of drowsiness.

1. Transformation of imagery type. Imagery modes ordinarily vague and feeble become dominant and vivid, even tending to replace customary imagery habits. Thus H—who is predominantly auditory and motor in type and can only with difficulty summon up visual images of even the most moderate vividness—has, in the drowsy state, visual experiences which constantly startle him by their clearness. I—to whom visual imagery is a common habit, but who, in her waking consciousness, can not understand what kinesthetic imagery is like—tends, in the drowsy state, to relive motor experiences almost exclusively.

2. Substitution of three types, sensory, perseverative, and ideal. Within the drowsiness fusion a present impression, a perseverative tendency, or even a pure memory element often substitutes itself for some other datum whose rôle it fills in the perceived composition of the hallucination.

3. Fluid association on a sensory basis, with removal of constraining mental sets and controls, leading to bizarre analogies, naïve statements, and unusual verbal juxtapositions.

4. Isolation. Association trains may develop when the drowsy state is extended over a long period of time, and show the same behavior as do the “flash-light” perceptual or ideational states in drowsiness proper, the essential thing being the release of all intellectual inhibition.

5. Grandeur and vastness characterize the simpler perceptual complications as well as the more developed thought processes.

6. Amnesia for processes and events occurring during the drowsy state comes quickly.

7. Absence of special symbolism, except in so far as the hallucination reflects the recent experiences or occupations and hence, perhaps, the fundamental interests of the observer.

Summary. The drowsiness hallucination seems to be a “flash-light” perceptual fusion or complication, and is further characterized by transformation of imagery type; sensory, perseverative, and ideal substitution; fluid association on a sensory basis; and by isolation of association trains when they develop; and it is accompanied by tendencies toward grandeur and vastness, by rapidly ensuing amnesia, and by absence of symbolism.

Mental Hygiene: CLYDE FURST.

A collection of items from biography and autobiography selected so as to illustrate the ways in which such material may suggest fruitful fields and methods for psychological study.

Thus, in the field of mental hygiene, individual equipment for sensation, and individual habits of confinement or exercise, food and sleep, and individual habits of work appear to have an adjustable relation to youth and age, to climate, season, and weather, and to weekly and daily rhythms of efficiency.

Similarly, environment, appliances, habit and variety, freedom and restraint, society and solitude may be, at least partially, controlled in their effect upon mental attitudes, interests, aims, and ideals, as these, in turn, are related to mental spontaneity and efficiency.

Study of mental action and reaction may thus be directed toward a definite selection of stimulus and a deliberate adoption of methods of work that will enhance both the welfare of the mental mechanism and the quality of its product.

Subjectifying the Objective: DICKINSON S. MILLER.

It has been maintained that the meaning of the proposition "It ought to be" can never be expressed by any proposition about human feelings, preferences, approvals, or the like; that there is something objective and absolute in the ethical proposition which is missing in the psychological form. But there is an exactly analogous relation between subjective and objective statement in a long list of cases other than the ethical. Thus we make objective statements about what is comic, and their absoluteness is lost when we only state propositions about human feelings of amusement. The whole column of correlatives would run as follows: obligation—approval; the comic—amusement; the beautiful—esthetic pleasure; value—desire; the strange—surprise; the sublime—awe; probability—expectation; "up and down"—certain feelings of effort and relaxation, etc. In each of these cases the one term has an objective and absolute character which is missed in the other, the other making a psychological and personal reference which is absent from the first; the meaning of the first can not be translated, without change, into the second. This fact is, however, fully explicable, and must needs be so because the person subject to the feelings does not in his primary experience psychologize upon himself or class what he feels as his own feeling.

Why in all these cases does the objective come by reflective people to be subjectified? And in what does subjectifying consist? The objective in such cases is subjectified simply because it is found to vary of necessity with the life and organism of the person experiencing it; and in this very fact and in nothing else consists its subjectivity.

Secondary Qualities: FREDERICK J. E. WOODBRIDGE.

The usual question suggested by the mention of secondary qualities is that of their existential status, namely, in what context may they be said to possess reality or to exist? The discussion of this question does not appear to have been profitable in the history of thought. It has moreover tended to divert attention from more important considerations.

Since secondary qualities do exist in the context of experience, one may ask what function they there serve. In answer to this question it may be pointed out that they serve as the means of identifying different efficiencies. Their importance, for instance, in chemical analysis and in the use of the spectrum is evident. It is to be noted that while they are the indices of efficiency, so to speak, no efficiency is assigned to them directly. Their methodological value appears to be thus their value as signs. Furthermore, the existence of secondary qualities appears to be bound up with the specific differentiation of the nervous system in the direction of sense organs. Indeed, it appears impossible to assign any other function to the development of sense organs and a coordinating nervous system than that of securing reaction of the organism to its environment by means of a specialization in view of the operation of secondary qualities. Bringing together, then, the considerations based upon the methodological value of secondary qualities and those based upon the significance of secondary qualities in the development of the sense organs and the nervous system, it would appear that reaction to secondary qualities as stimuli would afford both a criterion for the existence of consciousness and a definition of consciousness itself. In the life of an organism such reactions would serve as indications of the general connectedness of its surroundings.

A Forgotten Pragmatist: Ludwig Feuerbach: ROBERT H. LOWIE.

While it is commonly assumed that Germany lags behind in the development of pragmatic philosophy, the speaker contended that the theoretical principles of pragmatism have been long ago defended by Ernst Mach, while a humanistic conception of philosophy, joined with a conception of truth identical with that of Schiller and James, was postulated by Ludwig Feuerbach nearly seventy years ago. As modern pragmatism is primarily a protest against neo-Hegelianism, so Feuerbach's philosophy meant a secession from the older Hegelian school. Like James, Feuerbach insisted that philosophy must be based on the totality of human nature as opposed to its exclusively rational components. As an empiricist and nominalist, Feuerbach taught the primacy of the concrete as compared with the abstract. His refusal to abstract from the given totality of human nature prevented him from holding the materialistic views erroneously ascribed

to him. He considered reality and thought as incommensurate, and accordingly rejected all systems as artificially cramping the contents of experience. In the treatment of his special problem, the philosophy of religion, Feuerbach pursues a method strikingly similar to that of James and Schiller in their critique of "pure truth" and of Mach in his critique of the Ding an sich: the divine is recognized as based on human traits mystified and set up as non-human by the religious consciousness. Feuerbach's atheism in no way contravenes his pragmatism; for it is based not on the metaphysical question of the existence of the deity, but on the purely practical question whether religion has "worked" satisfactorily. This Feuerbach denies, considering religion an obstacle to social and political progress; but this difference from James and Schiller is merely a difference in the interpretation of historical data and only emphasizes his insistence on pragmatic standards.

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REVIEWS AND ABSTRACTS OF LITERATURE

Three Philosophical Poets: Lucretius, Dante, and Goethe. GEORGE SANTAYANA. Cambridge: Harvard University. 1910. Pp. viii + 214.

The founder and editor of the *Harvard Studies in Comparative Literature*, Professor W. H. Schofield, is certainly to be congratulated upon this first volume of his series. Comparative literature is still caviare to the general; Professor Santayana's charming essay reveals it as "bread of angels"—to use Dante's phrase for the knowledge that is at once delectable and sustaining. The author, indeed, is modest enough about his book. "It contains," he says, "the impressions of an amateur, the appreciations of an ordinary reader, concerning three great writers. . . . I am no specialist in the study of Lucretius; I am not a Dante scholar nor a Goethe scholar. . . . My excuse for writing about them, notwithstanding, is merely the human excuse which every new poet has for writing about the spring." But Professor Santayana is by no means as ingenuous as he sounds. Later, anent the "Vita Nuova," he shows the claws behind the velvety innocence. "The learned will dispute forever on the exact basis and meaning of these confessions of Dante. The learned are perhaps not those best fitted to solve the problem. It is a matter for literary tact and sympathetic imagination. It must be left to the delicate intelligence of the reader, if he has it; and if he has not, Dante does not wish to open his heart to him. His enigmatic manner is his protection against the intrusion of uncongenial minds." Now I do not mean to imply here a disclaimer of "learning"—as opposed, apparently, to "literary tact and sympathetic imagination," not to say "delicate intelligence"—that the author may claim a mind not uncongenial to

Dante and such. That would not be fair. At the same time, there is a challenge in the author's tone against minuscular research in mere matters of fact.

There is, however, a difference between weighty and heavy learning; and in spite of its author's disclaimer, the book in hand is weighty with learning. Listen to the announcement of the synthetic unity of the argument: "Indeed, the diversity of these three poets passes, if I may use the Hegelian dialect, into a unity of a higher kind. Each is typical of an age. Taken together, they sum up all European philosophy." Indeed, if I do not wrong him, Professor Santayana uses more than the Hegelian dialect, he arrives at relations between his three poets that remind one of the conclusions of the Hegelian dialectic. Thus for the philosopher of Lucretius, "the decadence of all he lives by is the only prospect before him; his whole philosophy must be a prophecy of death." The saint of Dante looks forward to an eternity of changeless ecstasy. For all of us, according to Dante, "the other life is a second experience, yet it does not contain any novel adventures. It is determined altogether by what we have done on earth; as the tree falleth, so it lieth, and souls after death have no further initiative." On the other hand, "the soul of Faust is to pass, in another world, through some new series of experiences. But that destiny is not his salvation: it is the continuance of his trial." Eternal *non-being*—eternal *being*—eternal *becoming*—such have been the three prospects successively offered mankind. And as they who offer, "taken together, sum up all European philosophy," it turns out that we are after all being given no lightsome spring poem of criticism, but a reasoned phenomenology of the European spirit.

There is a dialectic, again, in the final evaluation of the three poets, and of—shall we say—the three ages they typify. "Goethe is the poet of life; Lucretius the poet of nature; Dante the poet of salvation. Goethe gives us what is most fundamental,—the turbid flux of sense, the cry of the heart, the first tentative notions of art and science, which magic or shrewdness might hit upon. Lucretius carries us one step farther. Our wisdom ceases to be impressionistic and casual. It rests on understanding of things, so that what happiness remains to us does not deceive us, and we can possess it in dignity and peace. Knowledge of what is possible is the beginning of happiness. Dante, however, carries us much farther than that. He, too, has knowledge of what is possible and impossible. He has collected the precepts of old philosophers and saints, and the more recent examples patent in society around him, and by their help has distinguished the ambitions that may be wisely indulged in in this life from those which it is madness to foster,—the first being called virtue and piety and the second folly and sin." Taken separately, then, the three visions are defective: Lucretius sees nature more as nature is, but meagerly; Goethe sees nature richly, but his rich "volume of life" is after all too much a "magical medley"; Dante, like Lucretius, sees nature as an ordered whole—like Goethe, sees nature richly—but nevertheless only as "an inverted image of the moral world," as a "mirage." Therefore "the truly philosophical or comprehensive poet," who even now

may be waiting with his poem among the babes unborn, will unite the insights and gifts of the three poets—even as will the new age he shall typify.

Aggredere o magnos, aderit iam tempus, honores,
cara deum suboles, magnum Iovis incrementum!

Such—to apply to his book its author's words on "Faust"—is the official moral, and what we may call its general philosophy; but—for his own qualifying words apply as well—this moral is far from exhausting the philosophic ideas which the book contains.

The initial defense of the long philosophical poem itself is subtle. Against those who, like Poe, for instance, decry the long poem as inevitably unpoetic except in parts, Professor Santayana protests that it is the poet's fault, and not that of his wide perspective. Indeed, he says, "what makes the difference between a moment of poetic insight and a vulgar moment is that the passions of the poetic moment have more perspective." "As in a supreme dramatic crisis all our life seems to be focused in the present, and used in coloring our consciousness and shaping our decisions, so for each philosophic poet the whole world of man is gathered together; and he is never so much the poet as when, in a single cry, he summons all that has affinity to him in the universe, and salutes his ultimate destiny." *In a single cry*—aye, but there's the rub. In one pregnant moment, the poet may somehow realize the all, and the many in the all—as the composer who declared that in a single rapturous moment he had heard his whole symphony; but to express the vision, detail by detail, in articulate and consecutive speech, is a task necessarily of many moments, many moods. The cosmic insight may be the supremely poetical insight; but the cosmological poem is pretty sure to have vacant interlunar spaces of dullness. Lucretius *can* play the logician; Beatrice *can* talk like a graduate of the higher education for women; Goethe *can* be long-winded and irrelevant; *quandoque bonus dormitat Homerus*. Professor Santayana admits as much; but I can not see that his argument proves more than that some day some genius shall have changed all that. Maybe; but the last words of the book are quite true: "This supreme poet is in limbo still."

Professor Santayana's manifest, if qualified, sympathy with the naturalistic insight of Lucretius leads him, I venture to think, into occasional unfairness towards other, especially supernaturalistic, insights. He declares, for instance, that for Dante—as for Mohammed, Tertullian, and Calvin—"the everlasting shrieks and contortions of the damned alone will make it possible for the saints to sit quiet, and be convinced that there is perfect harmony in the universe. On this principle," he continues, "in the famous inscription which Dante places over the gate of hell, we read that primal love, as well as justice and power, established that torture-house; primal love, that is, of that good which, by the extreme punishment of those who scorn it, is honored, vindicated, and made to shine like the sun. The damned are damned for the glory of God." And "this doctrine," he says he can not help thinking, "is a great disgrace to human nature." It doubtless is a disgraceful doctrine; but there may be

question if Dante ever enounced it.¹ Assuredly, primal love, in making hell, was not concerned to provide an effective contrast for the "living topazes" of heaven by a jet setting. The famous description goes on to declare: "Before me were no things created, but eternal, and eternal I endure."² Hell, that is, was created simultaneously with man. The greatest gift which primal love made to man at his creation was free will.³ But moral freedom involves not only the knowledge, but also the choice, of good and evil; and the responsibility for the choice of evil involves *ipso facto* the existence of hell. Thus hell may be said to have been made by primal love as the reverse of that medal conferred on humanity, of which heaven is the obverse, and free will the carrying metal. The medal is still the greatest gift of God, whether we choose to wear it "heads" or "tails." The damned are not damned for the glory of God, but for the possible glory of mankind, attainable alone through freedom. Dante's may or may not be a satisfactory solution of the problem of evil;⁴ but I can not see that it involves, doctrinally, any gloating of the saints over the sufferings of sinners.

Professor Santayana raises a still more capital issue later. "The fact," he says, "that according to him [Dante] the celestial spheres are not the real seat of any human soul; that the pure rise through them with increasing ease and velocity, the nearer they come to God; and that the eyes of Beatrice—the revelation of God to man—are only mirrors, shedding merely reflected beauty and light"—"these hints suggest the doctrine that the goal of life is the very bosom of God; not any finite form of existence, however excellent, but a complete absorption and disappearance in the Godhead." "Dante broaches this point in the memorable interview he has with Piccarda," says Professor Santayana; and her answer means, he affirms, that "she would fain go higher, for her moral nature demands it . . . but she dare not mention it, for she knows that God, whose thoughts are not her thoughts, has forbidden it." For a free and immortal individual soul to be completely absorbed and to disappear even in the Godhead, however, surely violates "the initial truth which

¹ Gibbon's uncandid imputation to Tertullian of similar doctrine is effectively disposed of by T. R. Glover in "The Conflict of Religions in the Early Roman Empire," 1909, Ch. X.

² Dinanzi a me non fur cose create,
se non eterne, ed io eterno duro.

³ Lo maggior don, che Dio per sua larghezza
fesse creando, ed alla sua bontate
più conformato, e quel ch'el più apprezza,
fu della volontà la libertate,
di che le creature intelligenti,
e tutte e sole furo e son dotate.

Par. V., 19-24.

⁴ Dante, of course, is well aware of the difficulty of harmonizing free will and predestination, which would seem to throw the responsibility back upon God; but he accepts the fact of the harmonization as an article of faith. To explain it is beyond human, even angelic, capacity. Cf. Par. XX., 130-8; XXI., 76-102.

man believeth," according to Dante—the law of contradictories. Dante explicitly states that the kingdom of heaven, no less than earthly kingdoms, involves diversity of citizenship.⁵ Even if the blessed were to approach nearer and nearer to God through eternity, they would never quite reach him; their approach would be, to speak mathematically, asymptotic. But Dante explicitly denies that all, even all pure, souls rise through the spheres "with increasing ease and velocity." When the limit of individual virtue is reached, "needs must the rays of the true love mount upward with less life."⁶ God has not forbidden them; it is the free choice, the self-expression, of the individual. Nor is it fair, I think, to make Piccarda say that her humble seat in heaven "brings her happiness enough"—as if she in secret yearns for more happiness. She does say that "everywhere in heaven is paradise," that is, perfect happiness; and as if to make her assurance doubly sure, Dante emphasizes the sentiment in the words of Justinian in the sphere next above, where excellence bears the taint of having sought worldly honor: "But in the commensuring of our rewards to our desert is part of our joy, because we see them neither less nor more. Whereby the living justice so sweeteneth our affection that it may ne'er be wrenched aside to any malice. Divers voices upon earth make sweet melody, and so the divers seats in our life render sweet harmony amongst these wheels."⁷ Possibly, Piccarda, Justinian, and the others ought—from a romantic standpoint—to have appealed in their hearts from their lower seats amongst those wheels; but if they did, to say the least, they were—for saints—strangely uncandid with Dante.⁸

If Professor Santayana's point of view has been a shade romantic in his discussion of Dante's heaven and hell, he makes amends in his half-humorous deprecation of Goethe's romantic philosophy. His interpretation of "Faust," indeed, is, if I am not mistaken, audaciously unorthodox. The conventional Goethean might well say of him, as he says of Mephistopheles: "We think him a villain;" but would straightway be compelled to add—as he does—"and find him delightful." He would seem to make "Faust" in effect a more glorious precursor of Ibsen's "Peer Gynt"—a *reductio ad extremum*, if not *ad absurdum*, of the romantic philosophy. For his Faust, the *Ewig-weibliche*—the illusive ideal

⁵ Par. VIII., 97–120.

⁶ Par. VI., 116–7.

⁷ Ma nel commensurar dei nostri gaggi
col merto, è parte di nostra letizia,
perchè non li vedem minor nè maggi.
Quindi addolcisce la viva giustizia
in noi l'affetto sì, che non si puote
torcer giammai ad alcuna nequizia.
Diverse voci fan giù dolci note;
così diversi scanni in nostra vita
rendon dolce armonia tra queste rote.

Par. VI., 118–126.

⁸ Whether an inner contradiction may lie between Dante's avowed orthodox Thomism and his Franciscan mysticism is another story. He himself admits no such contradiction.

—is like the traditional wisp of hay held just in front of the donkey's nose; its virtue is that it keeps him moving—where, matters not. Or, Faust's soul is like a top, that keeps upright as long as its spins. If it stops spinning, it falls. So the romantically heroic soul is the soul that can keep on spinning indefinitely without nausea. Mephistofeles is "the spirit that denies" the worth-whileness of this perpetual motion without progress, and would fain stop once for all and end all the insane whirligig of life. Faust conquers; for, after all, his translation to heaven does not mean final rest. For the romantic soul rest is surrender. Heaven is but another episode of unrest. For a while, Faust "is going to teach life to the souls of young boys, who have died too soon to have had in their own persons any experience of Rathskellers, Gretchens, Helens, and Walpurgisnachts." But this plainly can't last; Faust has been a schoolmaster already, and hated it. "Some fine day he will throw his celestial school-books out of the window, and with his pupils after him, go forth to taste life in some windier region of the clouds."

This endless pursuit of the pursuit, however sufficient it may appear to God "under the form of eternity," is plainly not to the taste of Professor Santayana. It is indeed "the official philosophy" of "Faust," yet after all but an "afterthought"—a way of knotting together Faust's string of experience. The experience is the thing; any other knot would have served as well, or better,—any, forsooth, except what may be called the text-book notion of redemption in the Sunday-school sense, with Faust and his Gretchen reunited, to live happily ever after in a gingerbread heaven. For Professor Santayana, the wisdom of Goethe is not synthetic, but episodic; "Faust" is a Joseph's coat of shreds and patches—somewhat luridly unseemly as a garment, but brilliant beyond words in spots. The judgment, by the way, is interesting as another example of the increasing reaction against romanticism nowadays.

There will be many, no doubt, who will take sharp issue with this interpretation and estimate of "Faust." Throughout the book, indeed, more than one idol of the critical tribe is rudely shattered, but with so much grace as to disarm wrath. The whole essay is a justification of the saying that true criticism of literature is itself creative literature. To all doubters or demurrers, the book may make reply, like Dante's ode,—

Ponete mente almen com'io son bella.

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Wissenschaft und Religion in der Philosophie unserer Zeit. EMILE BOUTROUX. Translated into German by Emilie Weber, with an introduction by Professor H. Holtzmann. Leipzig und Berlin: Verlag von B. G. Teubner. 1910. Pp. vi + 371.

To the Germans, who have not as yet got rid of the Hegelian notion that the obscurer the philosophy the more profound it is, such a clear and accurate translation of Boutroux's work will no doubt be of great service. Credit must be given to the German translator for having so thoroughly penetrated the author's thoughts. Not only has she rendered them ac-

curately, but, instead of using the technical German expressions, condensed almost to obscurity, she has appropriated the ease and clearness of the author's style. There has also lately appeared an English translation. Boutroux's work, which is a study of the contemporary attempts to reconcile science and religion, is of like interest to the French, the Germans, and the English, as the author has chosen from each of those nations the typical representatives of the doctrines he considers. The work may be said to combine the clear and easy style characteristic of the French, the logical and deep historical insight of the German, and the common sense of the English and American.

In spite of the truth of William James's statement that "originality can not be expected in a field like this, where all attitudes and tempers have been exhibited in literature long ago, and where any new writer can immediately be classed under a familiar head," Boutroux's view of the problem is an independent and original view, a view which he had exposed already in his doctor's dissertation "*Contingence des lois de la nature*" (1874) and in other works. In that work, as in his "*Idée de la loi naturelle*," Boutroux has maintained that contingency is at the bottom of nature, that the necessity of natural laws is only relative, that nature is constituted of a series of superimposed stages, each stage adding something not contained in the preceding one; and that their connection is a contingent, not a necessary, one. The last lines of his "*Contingence des lois de la nature*" end in the belief that the complete triumph of the good and the beautiful would bring the disappearance of the laws of nature and replace them by the free aspiration of the will towards perfection, by the free hierarchy of souls. It is this view of nature which we find reflected in his conception of religion. Religion is the surpassing of the plan of nature which imposes the existence of evil; it aims to bring nature to that higher stage where the good is realized through good and not through evil. It is religion which lends value, ideal form, and right to existence, and development to everything that has in it something positive and living. It is that superior motive of the human soul which allows it to go beyond itself. God is the existence of that force through which, in our transformed spatial and temporal world, the good can become itself the means of good. The basal elements of Boutroux's religion are essentially moral. He summarizes religion in the terms faith, representation of an ideal, and love. But faith is not essentially faith in the divine, it may be faith in duty; the representation of an ideal may also be a social ideal, an ideal of justice, and, finally, the feeling of love can and must be reduced to the love of humanity. Boutroux's ideal of religion recalls Auguste Comte's "*Religion of Humanity*," with the difference that Auguste Comte conceived religion in sociological terms, while Boutroux conceives it from a spiritual and moral aspect. We could not, however, maintain that Boutroux reduces the religious conscience to the moral one. He makes, it is true, faith in duty the essential basis of religion, but, on the other hand, he asserts that morality owes its development, force, and efficiency to the religious principle which lies at its basis, and that duty has a supersensible character whose origin is as

unknown as the concept of God. He sometimes adduces morality as the basis of religion, and sometimes the reverse, but finally identifies the two. Practise of duty, pursuit of the ideal, communion of souls, are, he says, at the core of Christ's teaching, both religious and moral.

To the dogmas and rites of traditional religion Boutroux accords but a temporary rôle. He admits their relative necessity for our present time, but hopes that the evolution of religion will bring us to a conception of it which is the worship of God in spirit and truth. He does not, however, as some critics have charged, dissociate religion from all objective and intellectual content. All radical separation between the objective and the subjective is to him artificial and false. In the forms, as he indicates, the material elements are already included. All faith, he asserts, is faith in something.

Boutroux is not concerned with religion and science as objective systems. The problem for him is: What is the religious attitude, what is the scientific attitude, and how may they be reconciled in one and the same mind? He sees no incompatibility between these two attitudes. The problem, he thinks, will disappear if we take science and religion, not as two dogmatic doctrines, but as experimental sciences, and if, instead of conceiving the world as static, we take it as a dynamic and growing reality. Science and religion stand in two totally distinct spheres of thought and fulfill two distinct functions. Science is that which deals with what is, in its being, actually given, while religion goes to the sources and initial determinations of being and aims at that which ought to be. The scientific spirit, as Boutroux sums it up, is the sense of the sovereignty of experience; the religious spirit, the sense of the sovereignty of the ideal. This distinction, however, might be contested. As James has well proved, the religious life also is an experience, while in the scientific experience there is as much of ideal, belief, hope, and emotion as in the religious mind.

But, though distinct, science and religion are for Boutroux intimately connected. The point of connection he finds in the notion of life. Human life participates in religion through its ideal ambitions, and in science through its relation to nature. Boutroux seeks in the relation of science and religion the same relation he has sought to establish between necessity and contingency in his "*Contingence des lois de la nature*." He finds in both of them a progress where freedom is solicited without being necessitated, a passage from fact to action, from what is to what ought to be. This passage is not a logical necessity, but neither is it logically arbitrary—it presents this solidarity in contingency which is precisely the kind of connection reason seeks to determine. It is an extra-logical relation, neither analytic nor synthetic, but it is none the less real since it is exemplified in life.

Boutroux's conception of life is but a synonymous term for the pragmatist's "action." In spite of the criticisms Boutroux directs against pragmatism, his view is very much akin to pragmatism. There are throughout some affinities with James. The statement of the problem, the distinction of the two systematizations, scientific and religious, based

on differences of point of view, with which Boutroux concludes his work, is clearly marked out in James's "Variety of Religious Experiences." But while for James the conciliation between science and religion is only a progress hoped for in the future, for Boutroux the question is actually solved by the consideration that the scientific reason is only a part of the higher human reason. However, in this distinction between the scientific reason and what he calls reason in general, Boutroux departs from pragmatists who would refuse to make such a distinction. Belonging to the neo-critical school by whose earlier works pragmatism was favored, Boutroux was among the first in France to favor the pragmatic views. His own view, as manifested in his early work, was also an attempt to mediate between idealism and empiricism. Boutroux's ideas have exercised great influence on the epistemological conception of Poincaré. The author of "L'action," Blondel, was also greatly influenced by him.

Turning now to the main object of the book, which is to give the views of the contemporary philosophic systems rather than his own, the author divides them into two groups, one of which represents the naturalistic tendency, the other the spiritualistic. In the first group he places the positivism of Auguste Comte, the evolutionism of Spencer, the monism of Haeckel, and the doctrines of psychologism and sociologism. In the second group he places the radical dualism of Ritschl and his disciples, the doctrine of the limits of science, the philosophy of action, and the doctrine of religious experience as treated by James. All these doctrines Boutroux finds incomplete. In Comte's positivism, science and religion confront one another because they are put in a world of finite phenomena. In Spencer he challenges the legitimacy of the point of view of absolute objectivism. Haeckel has not justified the inductions which make of science a philosophy, nor proved how, from this evolutionary monism, human value, freedom, and fraternity, the basal concepts of religion, could be deduced. The doctrine of psychologism leaves a residuum which it can not explain, while to the doctrine of sociologism Boutroux objects that religion is individual and internal. With what he calls the spiritualistic tendency, Boutroux is more in sympathy. He none the less finds it vulnerable at some points. To Ritschl and his disciples, who relegate religion wholly to the inner life, Boutroux objects that they make religion a pure abstraction, and that the integrity of religion can only be secured against the attack of science by using the facts of science as instruments for the realization of religious ideas. The doctrine of the limits of science, orientating beyond itself to religion, is to Boutroux the most satisfactory view, but does not secure to science and religion the full autonomy which they both claim. The philosophy of action, to which he so sympathetically inclines, and which, he says, is called, perhaps, to realize great things, does not for Boutroux in its actual form solve the difficulty it confronts, and can satisfy neither the scientist nor the religious man. Boutroux raises against pragmatism the usual but unfounded attack that it renounces being and objectivity. He also contests the validity of the pragmatic concept of religion when reduced in its essence to pure action, independent of all intellectual content. He raises the same objection against James. The interesting

analyses of James are subject to objections from the scientists and the religious men. The assimilation of religious to scientific experience is not sufficiently justified. Boutroux objects to James in the words of Hoeffding, that it is the faith wrapped up in religion which characterizes it at once as experience and as religious.

This is but a brief sketch of the very interesting historical and critical study which Boutroux makes with such firm judgment and sympathetic understanding.

Boutroux's research, beginning with Comte and ending with the religious experience of James, shows that the nineteenth century is advancing from naturalism to spiritualism, from the suppression of all supernaturalism to the study of it by the experimental method. In the eighteenth century, the attack against religion was directed by philosophers who thought they had finished with religion. In the nineteenth century men are imbued with the lessons of history; they do not believe that there could be a complete evolution transforming things to their roots. Even Renan, the very prophet of the irreligion of the future, writes to Sainte-Beuve, with regard to religion: "No, I did not want to detach from the trunk a soul which was not ripe" (quoted by Guyau). Le Roy, in an account of the philosophy of religion in France (*Philosophical Review*, 1908), writes that the renewal of religion began twenty years since, and that a simple reading of book notices in reviews will suffice to convince us of it. He attributes this to the spread of pragmatism. "The living philosophy of religion of to-day," he writes, "has its face turned in a quite different direction from scholasticism; it calls itself a philosophy of action." So also the late Borden P. Bowne, in a recent number of the *Hibbert Journal*, shows that there has been a renaissance of faith within the last generation, and seems also to attribute it to the influence of pragmatism. It would seem that Christianity finds in pragmatism more than in any intellectual system its adequate metaphysics. Professor Dewey, in an article¹ written in quite a different connection, expresses the thought that the dualism between beliefs and realities, or, in more concrete terms, between religion and science, is due to the fact that "Christianity at its birth did not meet with intellectual formulations corresponding to its practical proclamations. It had to absorb the Stoic epistemology, which is the identification of reality with knowledge divorced from personal reference, origin, and outlook."

But with the recognition by the present-day philosophies of the artificiality of all dualism between subject and object, inner and outer, beliefs and realities, etc., the conflict is bound to disappear. Both science and religion are regarded as necessary ingredients of our experience; both are necessary moments of progress and civilization. The conflict of science and religion, a phrase that was common in the past centuries, seems to be rewritten now into the "friendship of science and religion," a statement recently made by the Archbishop of York before the British Association for the Advancement of Science, held at Sheffield.

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¹ "Beliefs and Realities."

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. November, 1910. *The Philosophy of Henri Bergson, I.* (pp. 579-596): G. U. DALSON. — A non-critical exposition of the facts and contents of the philosophy of Bergson. *Objective Idealism and its Critics* (pp. 597-609): B. H. BODE. — A discussion of idealism, realism, and pragmatism with a view to their exact differentiation. It is maintained that much of the controversy concerning them is due to the absence of satisfactory definition. *Ontological Absolutism* (pp. 610-631): EDWARD GLEASON SPAULDING. — The second of a series on the subject of *The Logical Structure of Self-Refuting Systems*. "Ontological absolutism is constructed, first, by rejecting the 'external view' of relations and accepting the general 'internal view,' and then, second, by eliminating the 'constitutive' interpretation of this last doctrine and arguing to the 'underlying reality' interpretation, an argument which is, however, full of snares." The transition is made to realism, a "self-confirming" system. *Discussion: Professor Boodin on the Nature of Truth* (pp. 632-638): RADOSLAV A. TSANOFF. *Reviews of Books* (pp. 639-664). John McTaggart, Ellis McTaggart, *A Commentary on Hegel's Logic*: JOHN GRIER HIBBEN. H. Heath Bawden, *The Principles of Pragmatism*: B. H. BODE. Von Ernst Cassirer, *Das Erkenntnisproblem in der Philosophie und Wissenschaft der neueren Zeit*: GEORGE H. SABINE. *Notices of New Books. Summaries of Articles. Notes.*

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NOTES AND NEWS

THE International School of American Archeology and Ethnology was inaugurated in the City of Mexico on January 20. The founding patrons of the school are the government of the United States of Mexico, the government of Prussia, Columbia University, and Harvard University. The University of Mexico has placed at the disposal of the school rooms in which classes may be held, and will facilitate access to libraries, museums, institutes, and other scientific centers in which are pursued studies like those of the school, and will aid in the support of the school with an annual subsidy of \$6,000. Each patron will in turn appoint and pay a director of the school, and will also allot fellowships which will be sufficient to cover the expenses of board and lodging and transportation of a fellow. In accordance with the statutes the government of Prussia has appointed as director Professor Eduard Seler, director of the section of anthropology and archeology in the Royal Museum at Berlin, who has already made extensive researches in Mexico. He will hold office for one year, and will be aided by Professor Franz Boas, of Columbia, during his presence in Mexico as professor of anthropology at the National University. Two appointments to fellowships have been made, Dr. Werner Von Hächelmann by Prussia, and Miss Isabel Ranives Castaneda by Columbia University. All the explorations and studies of the school are to be subject to the laws of the country in which the work is undertaken, and all objects found in investigations or explorations will become the property of the national museum of the country in which the studies are carried out. In case similar specimens of the same kind of object are discovered duplicates will be given to the patrons who supply the necessary funds for the exploration. Most of the explorations will be conducted in the rich fields of Mexico, and the government of that country has already given the necessary authorization for the investigations which will soon be begun and are certain to produce interesting and valuable results.—*Science*.

WILIBALD A. NAGEL, professor of physiology in the University of Rostock, died at the age of forty years. While most of his work was devoted to the physiology of sense, Professor Nagel took great interest in the psychological side of his studies, and was always particularly hospitable to those American students of psychology who worked under him.

THE spring announcements of the Oxford University Press include a translation of Kant's "Critique of Judgment" by D. J. Chapman, and a translation of Aristotle's "De Partibus Animalium" by W. Ogle.

THE *Revue scientifique* announces that Professor Hans Meyer has presented 150,000 marks to the University of Leipzig for the establishment of an institute of experimental psychology.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE RELATION OF HISTORY TO THE NEWER SCIENCES OF MAN¹

THAT history must from time to time be rewritten is an oft-repeated commonplace. Why is this? The past, as ordinarily conceived, seems fixed and settled enough. No theologian has ever conceded to omnipotence itself the power to change it. Why may it not then be described for good and all by any one who has the available information at his disposal? The historian would answer that more and more is being learned about the past as time goes on, that old errors are constantly being detected and rectified and new points of view discovered, so that the older accounts of events and conditions tend to be superseded by better and more accurate ones. This is obvious; but granting that each new generation of historians does its duty in correcting the mistakes of its predecessors, is that all that is necessary? Is there not danger that it will allow itself to be too largely guided in the choice of its material and in its judgments of it by the examples set by preceding writers? It is the aim of this paper to consider whether historians are now adjusting themselves as promptly as they should to the unprecedented amount of new knowledge which has been accumulating during the past generation and to the fundamental change of attitude that is taking place in our views of man and society.²

¹This paper was read before the American Historical Association at Indianapolis, December 30, 1910. The opening portions have, however, been rewritten.

²Professor George Burton Adams, in a very thoughtful and suggestive address delivered before the American Historical Association, December 29, 1908, describes what for convenience he calls five hostile movements directed against the methods, results, and ideals of the established political historian. These "attacks" proceed from political science, geography, political economy, sociology and "folk-psychology." "For more than fifty years," he says, "the historian has had possession of the field and has deemed it his sufficient mission to determine what the fact was, including the immediate conditions that gave it shape. Now he finds himself confronted with numerous groups of aggressive and confident workers in the same field who ask not what was the fact—many

The usual training which a historical student receives has a tendency to give him the impression that history is a far more fixed and definite thing than it really is. He is aware that various elaborate attempts have been made to establish the *Begriff und Wesen* of history, that its methodology have been the theme of a number of treatises, and that its supposed boundaries have been jealously defended from the dreaded encroachments of rival sciences. Moreover, he finds the general spirit and content of historical works pretty uniform, and he is to be forgiven for inferring that he has to do with a tolerably well-defined subject-matter which may be investigated according to a clear and prescribed set of rules. I am inclined, however, to think that this attitude of mind is the result of a serious misapprehension, which stands in the way of the proper development of historical study. Before proceeding we must therefore stop a moment to consider the vague meaning of the term "history."

In the first place, history has a long and varied history which it is impossible even to sketch here. Suffice it to say that its subject-matter, its purposes, and its methods have exhibited in the past a wide range of variation which suggest many future possibilities when we once perceive the underlying causes of these changes. History can be shown to have somewhat reluctantly and partially adapted itself to the general outlook of successive periods, and as times changed it has changed.³ In the second place, the scope of historical investigation as actually carried on at the present day by those who deem themselves historians is so wide as to preclude the possibility of bringing it into any clearly defined category. The historian may choose, for example, like Gibbon, to extract from Procopius's "improbable story" of Alaric's capture of Rome the circumstances which have an air of probability. He may seek to determine the prevalence of malaria in ancient Greece, or to decide whether the humidity of Asia Minor has altered since the days of Cræsus, or to trace the of them seem to be comparatively little interested in that—but their constant question is what is the ultimate explanation of history, or, more modestly, what are the forces that determine human events and according to what laws do they act. This is nothing else than a new flaming up of interest in the philosophy, or the science, of history. . . . The emphatic assertion which they all make is that history is the orderly progression of mankind toward a definite end, and that we may know and state the laws which control the actions of men in organized society. This is the one common characteristic of all the groups I have described; and it is of each of them the one most prominent characteristic" (*American Historical Review*, January, 1909). It is the aim of the present paper to put the whole situation in a different light from that in which Professor Adams presents it.

³ I have recalled some of the phases of history's history in "History," a lecture delivered at Columbia University in the series on Science, Philosophy, and Art, Columbia University Press, 1908.

effects of the issue of some forty billions of francs of paper money in France between 1789 and 1800. As for method, a peculiar training is essential to determine the divergence between a so-called eolith and an ordinary chip of flint which did not owe its form to human adaptation; and another kind of training is required to edit a satisfactory edition of Roger Bacon's "Opus Majus." A judicious verdict on the originality of Luther's interpretation of the words *justitia dei*, in *Romans*, I., 17, demands antecedent studies which would be inappropriate if one were seeking the motives for Bismarck's interest in insurance for the aged and incapacitated. I think that one may find solace and intellectual repose in surrendering all attempts to define history, and in conceding that it is the business of the historian to find out anything about mankind in the past which he believes to be interesting or important and about which there are sources of information. Furthermore, history's chances of getting ahead and of doing good are dependent, I believe, on refraining from setting itself off as a separate discipline and undertaking to defend itself from the encroachments of seemingly hostile sciences which now and then appear within its territory. To do this is to misapprehend the conditions of scientific advance. No set of investigators can any longer claim exclusive jurisdiction in even the tiniest scientific field, and indeed nothing would be more fatal to them than the successful defense of any such claim. The bounds of all departments of human research and speculation are inherently provisional, indefinite, and fluctuating; moreover, the lines of demarkation are hopelessly interlaced, for real men and the real universe in which they live are so intricate as to defy all attempts of the most patient and subtle German to establish satisfactorily and permanently the *Begriff und Wesen* of any artificially delimited set of natural phenomena, whether words, thoughts, deeds, forces, animals, plants, or stars. Each so-called science or discipline is continually dependent on other sciences and disciplines. It draws its life from them, and to them it owes, consciously or unconsciously, a great part of its chances of progress.

As Professor Kemp has so graciously said of his own subject, geology, it could not have matured without the aid of sister sciences which necessarily preceded it. "The great, round world in its entirety can not be grasped otherwise than with the assistance of physics, mechanics, astronomy, chemistry, zoology, and botany." Not only was geology in its earlier growth "based upon the sister sciences, but it now progresses with them, leans largely upon them for support, and in return repays its debt by the contributions which

it makes to each."⁴ The historical student should take a similar attitude toward his own vast field of research. If history is to reach its highest development it must surrender all individualistic aspirations and recognize that it is but one of several ways of studying mankind. It must confess that, like geology, biology, and most other sciences, it is based on sister sciences, that it can only progress with them, must lean largely on them for support, and in return should repay its debt by the contributions which it makes to our general understanding of our species. In short, whatever history may or may not be, it always concerns itself with man. Would it not then be the height of folly and arrogance for the historian to neglect the various discoveries made about man by those who study him in ways different from those of the traditional student of the past?

In order to understand the present plight of the historian we must go back to the middle of the nineteenth century, when for the first time history began clearly to come under the influence of the modern scientific spirit. Previously it had been a branch of literature with distinctly literary aims, when it was not suborned in the interest of theological theories or called upon to stimulate patriotic pride and emulation. But about sixty years ago a new era in historical investigation opened which has witnessed achievements of a character to justify in a measure the complacency in which historians now and then indulge. The most obvious of these achievements seem to me to be four in number, and the historian owes all of them, if I am not mistaken, to the example and influence of natural science. He undertook in the first place to test and examine his sources of information far more critically than ever before, and rejected partially or wholly many authorities upon which his predecessors had relied implicitly. Secondly, he resolved to tell the truth like a man, regardless of whose feelings it might hurt, to set forth *wie es eigentlich gewesen*, in Ranke's famous dictum. Thirdly, he began to realize the overwhelming importance of the inconspicuous, the common, and often obscure elements in the past; the homely, every-day, and normal as over against the rare, spectacular, and romantic which had engaged the attention of most earlier writers. Fourthly, he began to spurn supernatural, theological, and anthropocentric explanations which had been the stock-in-trade of the philosophers of history. I do not propose to dwell upon these achievements, for no one will be inclined to question their fundamental character. They have cost a tremendous amount of labor, but they were the essential prelim-

⁴Kemp, J. F., "Geology," a lecture delivered at Columbia University in the series on Science, Philosophy, and Art, November 3, 1907, Columbia University Press, 1908.

inaries to any satisfactory progress. Are they, however, more than essential preliminaries? Do they not, on examination, prove to be rather negative in character? To resolve to tell the truth about what you have taken pains to verify according to your best ability; to reckon with the regular and normal rather than with the exceptional and sensational, and to give up appealing to God and the devil as historical explanations are but preparations for the rewriting of history. They furnish the necessary conditions rather than the program of progress. Moreover, they are by no means all of the necessary conditions. Still further preparations are essential before the historian can hope to understand the past.

Professor William I. Thomas (not a historian) well says:

"The general acceptance of an evolutionary point of view of life and the world has already deeply affected psychology, philosophy, morality, education, sociology, and all the sciences dealing with man. This view involves a recognition of the fact that not a single situation in life can be completely understood in its immediate aspects alone. Everything is to be regarded as having an origin and a development, and we can not afford to overlook the genesis and stages of change. For instance, the psychologist or the neurologist does not at present attempt to understand the working and structure of the human brain through the adult brain alone. He supplements his studies of the adult brain by observations on the workings of the infant mind, or by an examination of the structure of the infant brain. And he goes farther than this from the immediate aspects of the problem—he examines the mental life and the brain of the monkey, the dog, the rat, the fish, the frog, and of every form of life possessing a nervous system, down to those having only a single cell, and at every point he has a chance of catching a suggestion of the meaning of the brain structure and of mind. In the lower orders of brain the structure and meaning are writ large, and by working up from the simpler to the more complex types, and noting the modification of structure and function point by point, the student is finally able to understand the frightfully intricate human organ, or has the best chance of doing so."⁵

It would seem as if this discovery of the incalculable value of genetic reasoning should have come from the historians, but, curiously enough, instead of being the first to appreciate the full significance of historical-mindedness, they left it to be brought forward by the zoologists, botanists, and geologists. Worse yet, it is safe to say that, although the natural scientists have fully developed it, the historian has hitherto made only occasional use of the discovery, and history is still less rigidly historical than comparative anatomy or

⁵ "Source Book for Social Origins," 1909, p. 3.

social psychology. In even recent historical works one finds descriptions of events and conditions which make it clear that the writer has failed to perceive that everything has an origin and a development, that we can not afford to overlook its genesis and stages of change, "that not a single situation in life can be completely understood in its immediate aspects alone." Of course the historian has long talked of the "rise" and "fall" of empires, the "growth" and "decay" of institutions; he has of late devoted much attention to the development of institutions, and to this extent he adopts a genetic treatment; but there none the less lies back of all his work the long tradition of what we may call the episodal treatment of the past. He is still constantly making the futile attempt to describe *wie es eigentlich gewesen* without knowing *wie es eigentlich geworden*. The popular misunderstanding of the French Revolution, for instance, is due to the anxiety of the historian to depict the striking events from 1789 onward rather than to interpret them in the light of their antecedents, which are commonly despatched in an introductory chapter which furnishes no sufficient clue to what follows. The "Renaissance" has been pretty completely misconceived, owing to the ignorance of Burekhardt and Symonds in regard to the previous period. The culture of the middle ages in turn remains a mystery to one who has not scrupulously studied the *Weltanschauung* of the fourth century. The historian still puts himself in the position of one who should wake up in a strange bed and hope to comprehend his situation by taking a scrupulous inventory of the furniture of his room. The strangeness can only be dispelled and the situation understood by falling back on the past—in this case the simple historical consideration that one had on his way from Chicago to San Francisco been delayed and obliged to spend the night in Ogden. Should the historian give us, for instance, the most minute description of the conditions in the village of Salem in the year 1692, telling us just where Goody Bishop's cellar walls stood in which the fatal "pop-pets" were found, and pointing out the spot where Nehemiah Abbot's ox met an untimely and suspicious end by choking on a turnip, we should still fail to grasp this lamentable crisis in the affairs of New England, for the really vital question is, Why did our godly ancestors hang old women for alleged commerce with the devil? Only some knowledge of comparative religions and of the history of the Christian church can make that plain. Cotton Mather was the victim of a complex of squalid superstitions which the Protestant reformers had done nothing whatever to reduce or attenuate. He is not to be understood by the most prayerful study of his immediate surroundings.

The modern historical student's tendency to specialization, his as-

piration to master some single field, often stands in the way of his really understanding even what he seems to know most about. The difference between the best historical writing, which is rare enough, and the ordinary run of histories, lies in the historical-mindedness of the author. This is susceptible of far greater development than it has hitherto received,⁶ for it should ultimately permeate all historical treatises that pretend to be constructive and instructive and do not merely confine themselves to the accumulation of data and the raw material of history.

Historical-mindedness is by no means the only great debt that historians owe to workers in fields seemingly remote from theirs. Two historical facts of transcendent importance were discovered in the latter half of the nineteenth century. Neither of them was in any way attributable to historians. It was the zoologist who proved that man is sprung from the lower animals, and it was an English geologist who first clearly and systematically brought together the evidence that man has been sojourning on the earth, not for six thousand years only, but mayhap for six hundred thousand. The methods and outlook of the historian prevented him from making these discoveries. He may exonerate himself for his failure to suspect these truths on the ground that the data used to establish man's animal ancestry and his vast antiquity are wholly unfamiliar to him. Granting the propriety of this excuse, it may be asked whether he has seriously reckoned with these two momentous facts after they were pointed out to him by Darwin, Lyell, and others. He has certainly been slow to do so. They were new to the last generation of historians and they would have seemed quite irrelevant to Ranke or Bancroft in their undertakings. Even to-day I find that my *Fachgenossen* are some of them inclined to deny that man's descent from the lower animals is strictly speaking an historical fact, although they would concede that Henry II.'s descent from William the Conqueror was such. What is more important, most historical students would frankly confess that they saw no way in which man's descent or his long sojourn on the earth could be brought into any obvious relation with the problems on which they were engaged. In this they would be quite right. It is certainly true that most historical investigation can be carried on without reference to man's origin.

⁶ An interesting paper could be written on the common view entertained by historians that it is impossible to write the history of our own times; that historical methods can not be applied to recent events. Those who at one moment proclaim this doctrine at the next will freely acknowledge Thucydides, who confined himself to his own time, the greatest of all historians! It is most essential that we should understand our own time; we can only do so through history, and it is the obvious duty of the historian to meet this his chief obligation.

If one is endeavoring to determine whether Charles the Fat was in Ingelheim or Lustnau on July 1, 887, it makes little difference whether the emperor's ancestors talked with their creator in the cool of the evening or went on all fours and slept in a tree. If one is locating the sites of French forts on the Ohio River or describing the causes of Marie Antoinette's repugnance for Mirabeau, the jaw of the Heidelberg man may safely be neglected. Whole fields of historical research can be cultivated not only without any regard to man's origin, but without any attempt to understand man *überhaupt*. But there are many other and perhaps more important fields, as I trust may become apparent later, in which it is essential that the investigator should know everything that is being found out about man, unless he is willing to run the risk of superficiality and error.

While, then, the historian has been busy doing his best to render history scientific, he has, as we have seen, left the students of nature to illustrate to the full the advantages of historical-mindedness and to make two discoveries about mankind infinitely more revolutionary than all that Giesebrecht, Waitz, Martin, or Hodgkin ever found out about the past. To-day, he has obviously not only to adjust himself as fast as he can to these new elements in the general intellectual situation, but he must decide what shall be his attitude toward a considerable number of newer sciences of man which, by freely applying the evolutionary theory, have progressed marvelously and are now in a position to rectify many of the commonly accepted conclusions of the historian and to disabuse his mind of many ancient misapprehensions. By the newer sciences of man I mean, first and foremost, anthropology, in a comprehensive sense, prehistoric archeology, social and animal psychology, and the comparative study of religions. Political economy has already had its effects on history, and as for sociology, it seems to me a highly important point of view rather than a body of discoveries about mankind. But perhaps I am mistaken. In any case I have nothing to say about it at present in its relations to history. These newer social sciences, each studying man in its own particular way, have entirely changed the meaning of many terms which the historian has been accustomed to use in senses now discredited—such words as "race," "religion," "progress," "the ancients," "culture," "human nature," etc. They have vitiated many of the cherished conclusions of mere historians and have served to explain historical phenomena which the historian could by no possibility have rightly interpreted with the means at his disposal. Let us begin with prehistoric archeology.

The conservative historian might be tempted to object at the start that however important the development of man would seem to be

before the opening of history, we can unfortunately know practically nothing about it, owing to the almost total lack of documents and records. Archeology has of course, he would admit, revealed a few examples of man's handiwork which may greatly antedate the earliest finds in Egyptian tombs; some skulls and bones and even skeletons have been found, and no one familiar with the facts doubts that man was living on the earth thousands of years before the Egyptian civilization developed. But what can we know about him, except the shape of his jaw and the nature of his stone and bone utensils which alone survive from remote periods? If we feel ill-informed about the time of Diocletian or Clovis, how baseless are our conjectures in regard to the habits of the cave man!

It is certainly true that the home life of the cave man is still veiled in obscurity and is likely to remain so. Nevertheless, the mass of information in regard to mankind before the appearance of the earliest surviving inscriptions has already assumed imposing proportions. Its importance is perhaps partially disguised by the unfortunate old term "prehistoric." The historian glances at case after case of flint "eoliths," fist-hatchets, arrow-points, and scrapers, pictures of animals scratched on bits of bone, fragments of neolithic pottery and bronze celts, with emotions of weariness tempered by some slight contempt for those who see anything more in these than the proofs that there used to be savages long ago similar to those that may still be found in regions remote from civilization. Further reflection should, however, convince him that the distinction between "historic" and "prehistoric" is after all an arbitrary one. I suppose that "prehistoric" originally meant such information as we had about man before his story was taken up by Moses and Homer, when these were deemed the earliest surviving written sources.

History, however, in the fullest sense of the term, includes all that we know of the past of mankind, regardless of the nature of our sources of information. Archeological sources, to which the student of the earlier history of man is confined, are not only frequently superior in authenticity to many written documents, but they continue to have the greatest importance after the appearance of inscriptions and books. We now accept as historical a great many things which are recorded neither in inscriptions nor in books. It is an historical, not a prehistorical, fact that the earliest well-defined and unmistakable human tool, the fist-hatchet, was used in southern Europe, in Africa, India, Japan, and North America. This is exactly as historical as the recorded word that Julius Cæsar first crossed the English Channel at the full of the moon—and far more important.

Should the historical student still find himself indifferent to what

has been called palethnology,⁷ let him recollect that if, as it is not hazardous to assume, the oldest fist-hatchets were made by men living two hundred thousand years ago, the so-called "historical" period of from five to seven thousand years has to do with but a thirtieth or a fortieth of the time man has been slowly and intermittently establishing the foundations of our present civilization. But the fist-hatchet is, comparatively speaking, a highly perfected implement and is pretty well diffused over the globe, so that it suggests a vista of antecedent progress which separates man's speechless and tool-less ancestors from the makers of the fist-hatchets. It must be clear that if one ignores palethnology one runs the risk of missing the whole perspective of *modern* change. We have outgrown the scale which served for Archbishop Usher, who maintained that man and all the terrestrial animals were created on Friday, October 28, 4004 B.C., and which has led to a great deal of shallow talk about our relation to "the ancients" who are in reality contemporaries.

It seems highly improbable—to suggest a single reflection—that human mental capacity has either increased or declined during the trifling period which separates us from Plato and Aristotle. Indeed, could we imagine a colony of infants from the first families of Athens in the fifth century B.C. and another the offspring of the most intellectual classes of to-day, completely isolated from civilization and suckled by wolves or fed by ravens, both groups would start in a stage of de-civilization suggesting that of the chimpanzee. No one can tell how long it would take the supreme geniuses which such colonies might from time to time produce to frame a sentence, build a fire, or chip a nodule of flint into a fist-hatchet. Nor is there reason to think that either colony would have the advantage in making the first steps in progress. It is only education and social environment that separate the best of us from a savagery far lower than any to be observed on the earth to-day, lower probably than that of the lowest man of whom any traces still exist.

Then there is the word "race," which historical writers have used and still use with such recklessness. Most of the earlier theories of "races" and of the origin of man in western Asia were either consciously suggested or unconsciously reinforced by the account in *Genesis* of the Garden of Eden, the Deluge, and the confounding of language during the construction of the Tower of Babel.

⁷ The term prehistoric, or some such term as palethnology (suggested by de Mortillet) is still convenient, since the attempts to trace the stages of development of man previous to the appearance of the higher, and really very recent, forms of civilization which first meet us in Egypt and Babylonia involves a particular technical equipment, including, for instance, some acquaintance with geology and paleontology.

The Aryan theory set forth, for example, by Mommsen in the opening chapter of his "Roman History," to-day appears well-nigh as naïve and grotesque as the earlier notion of the Tower of Babel. Since the geological period when man may first have made his appearance on the earth there have been vast changes in the distribution of land and water, in climate and fauna. These natural changes in physical conditions must have caused all sorts of migrations and fusions. Add to these conquests and invasions, slavery and miscellaneous sexual relations. These have brought the most varied peoples together and produced an inextricable confusion of morals, manners, and tongues.⁸ In spite of this, one still finds historical students talking of "races" as if we could still believe Max Müller's persuasive tale of the plain of Iran and the dispersion of the Aryans.

These illustrations should be sufficient to substantiate the importance of prehistoric archeology for all students of history, since they all run grave risks of persisting in ancient error if they neglect its results. We are, however, by no means confined to the remains of man and his handiwork for our notions of what must have lain back of the highly developed civilizations which we meet when written records first become available. If, as Professor William Thomas has so happily phrased it, "tribal society is virtually delayed civilization, and the savages are a sort of contemporaneous ancestry,"⁹ those investigators—namely, the anthropologists—who deal with the habits, customs, institutions, languages, and beliefs of primitive man are in a position to make the greatest contributions to the real understanding of history. From the standpoint of man's development, anthropology may be deemed a branch of history in the same sense that animal psychology or comparative anatomy are branches of human psychology and human anatomy.

At least one historian of repute has recognized the truth of this. Professor Eduard Meyer prefaces the second greatly revised edition of his "History of Antiquity" with a whole volume of 250 pages on the "Elements of Anthropology." He says: "To have prefaced my work with such an introduction would formerly have excited the surprise and encountered the criticism of many of my judges at a time when the interests of most historians were entirely alien to such questions. Now, when such matters are the order of the day, no apology is necessary. . . . Indeed such an introduction is absolutely essential for a scientific and consistently conceived history of

⁸ Cf. DeMorgan, "Les premières civilisations," 10 sqq., for striking illustrations of bewildering human mixtures.

⁹ *Op. cit.*, p. 13.

antiquity."¹⁰ I fear that the helpfulness of anthropology for the historical student is still much obscured owing partly to his indifference to the whole question of human development, and partly to a more or less justifiable suspicion on his part that there is grave danger of being misled in our attempt to interpret past events and conditions by anthropological theories and schematism. It is one thing, however, to reject a tool because we are too stupid to see its use, and another to be on our guard against cutting ourselves. I am convinced that even the historical student who is stolidly and complacently engaged in determining past facts (except when he puts on the armor of the Lord to defend the lawful frontiers of history against invaders) would find the study of anthropology of value. It would tend to give him poise and insight, preeminently in all matters having to do with religion or religious sanction or the underlying forces of conservatism, and with these subjects he is constantly engaged in one form or another. No branch of modern research, indeed, has so upset older historical conceptions as the comparative study of religions, a science which is quasi-historical and quasi-anthropological in its sources and methods. The older historians failed to see very deeply into religious phenomena; manifestations of that class were commonly taken for granted and their origins excited little curiosity. But few phases of human development have proved to be more explicable than the religious. The complex syncretism which resulted in orthodox Christianity has been laid bare, as well as the very ancient and primitive superstitions which were incorporated into the theology of the fathers.

Recently I was told by M. Solomon Reinach, the distinguished director of the Museum of St. Germain-en-Laye, that when Mommsen visited the collections some years ago he had never heard either of the ice age or of totemism! He appeared to think that the terms might be the ingenious discoveries of M. Reinach himself. Now, Mommsen is properly ranked among the most extraordinary historians of modern times. The mass of his work and its quality are familiar to us all. Nevertheless, his ignorance of two of the commonplaces of prehistoric archeology and of anthropology prevented him from seeing the Roman civilization in its proper perspective and from thoroughly grasping the religious and perhaps even the legal phenomena. Man, as Henry Adams has so neatly expressed it, is

¹⁰ "Geschichte des Altertums," 2te Aufl. (1907), I., 1, viii sq. "Die Einleitung verdankt indessen keineswegs nur dem eigenen Interesse an diesen Problemen ihr Dasein, dem Streben nach Gewinnung einer einheitlichen historisch begründeten Weltanschauung, welches für mich überhaupt bei der Ergreifung meines Berufs die innerste Triebfeder gewesen ist; sondern sie ist für eine wissenschaftliche, einheitlich gedachte Geschichte des Altertums überhaupt ganz unentbehrlich," *op. cit.*, p. ix.

now viewed as a "function" of the ice age during a very long period. As for totemism, it has been called upon to explain such different phenomena as the frescoes in the dark caves of the Magdalénien period, the abhorrence of the Jew for pork, and the esteem of a baseball team for its mascot. Many beliefs and practises of the Christian church are now seen to go back by direct or by devious ways to totemism, animism, and the mana.

The historical student who realizes this will hasten to acquaint himself, if he has not already done so, with some of the most suggestive works in this field of anthropology and comparative religion. He will be a very dull person indeed if he does not find his conceptions of the past fundamentally changing as he reads, let us say, the extracts which Professor Thomas has so conveniently brought together in his "Source Book for Social Origins" or the fascinating "Folkways" of the late Professor Sumner; or Solomon Reinach's "Orpheus," Conybeare's "Myth, Magic, and Morals," or DeMorgan's "Les premières civilisations," to mention only the more obvious examples of this class of literature.

So it has come about that the older notions of our relations to the so-called "ancients," of religion in general and Christianity in particular, and of "race" are being gravely modified by the investigations of those who are not commonly classed as historians. These latter have demonstrated the superficial character of the historians' reasoning and pointed the way to new and truer interpretations of past events and conditions. Other terms which historians have used without any adequate understanding of them are "progress" and "decline," "human nature," "historical continuity," and "civilization." Even a slight tincture of anthropology, reinforced by the elements of the newer allied branches of social and animal psychology, will do much to deepen and rectify the sense in which we use these terms.

Social psychology, as yet in an inchoate condition, is based on the conviction that we owe our own ego to our association with others; it is a social product. Without others we should never be ourselves. "Whatever may be the metaphysical impossibilities or possibilities of solipsism, psychologically it is non-existent. There must be other selves if one's own is to exist. Psychological analysis, retrospection, and the study of children and primitive people give no inkling of situations in which self could have existed in consciousness except as the counterpart of other selves."¹¹

It may at first sight seem a far cry from the origin of the ego and its dependence on the *socius* to such historical questions as the dates

¹¹ Mead, "Social Psychology as Counterpart to Psychological Psychology," *Psychological Bulletin*, Vol. VI., No. 12, 1910, p. 407.

of Sargon's reign, the meaning of the Renaissance, or Napoleon's views of the feasibility of invading England. There are, however, plenty of matters of still more vital importance on which the judgments of historical students are likely to be gravely affected by some acquaintance with the recent discussions in regard to the laws of imitation with which Tarde's name is especially associated; and with the relation of our reason to the more primitive instincts which we inherit from our animal ancestors. Indeed the great and fundamental question of how mankind learns and disseminates his discoveries and misapprehensions—in short, the whole rationale of human civilization as distinguished from the life of the anthropoids—will never be understood without social psychology; and social psychology will never be understood without animal psychology; and these alone can serve to explain the real nature of progress and retrogression—matters to which no historical student can afford to remain indifferent. There is obviously no possibility of explaining adequately on this occasion this rather perturbing proposition, but its importance seems to me so great that I am going to venture to present the situation very briefly.

In the first place, is it not clear that we still permit ourselves, as is not at all unnatural, to be victimized by the old anthropocentric conception of things? This has been so long accepted by the western world that in spite of the discoveries of the past sixty years we find many unrevised notions from the past still lurking in the corners of our judgment. We are constantly forgetting, I fear, that man was not created, male and female, in a day, as Mark Hopkins and those of his generation commonly believed. We did not begin our human existence with pure and holy aspirations, a well-developed language, and a knowledge of agriculture, but are descended from a long line of brute ancestors, unable either to talk or to cultivate the soil. All animals, that now live or ever have lived on the earth, including man, "are mayhap united together by blood relationship of varying nearness or remoteness." Every one of us has a pedigree stretching back not merely a couple of hundred generations, but through all geologic time since life first commenced on the globe. Man's *bodily* resemblance to the anthropoid apes has long been a subject of comment. Ennius gave expression over two thousand years ago to the disconcerting discovery:

Simia quam similis, turpissima bestia, nobis?

With the modern development of zoology and comparative anatomy more intimate structural similarities were brought to light; Darwin sketched a portrait of the *turpissima bestia*, our hairy ancestor, with his tail, prehensile foot, and great canine teeth. This hypothesis has

since been substantiated by the discovery of numerous vestigial muscles and organs, atavistic reversions, and pathological conditions which can be readily explained only on evolutionary grounds. But if our bodies and their functions so closely resemble those of our nearest relatives among the animals, what shall we say of our minds? Are these altogether different from the animal minds from which they have gradually developed, or do they perpetuate, like our bodies, all the old that is still available and perhaps not a few traits that now merely hamper us or tend to beget serious disorders? May not the minds of our remote ancestors, who had not yet learned to talk, still serve us not only in infancy and when senile dementia overtakes us, but may they not be our normal guides in the simpler exigencies of life? I think that it is not hazardous to affirm that the perpetuation in man of psychological processes to be observed in the other primates would be conceded by all students of animal psychology. If this be true, may we not look to the study of animal psychology, as it develops, for information which will enable us to discover and appreciate for the first time what really goes to make up a human being as distinguished from his humbler relatives?

Comparative, or animal, psychology has only recently found a place in some of our universities. Professor E. L. Thorndike was perhaps the first, some ten years ago, to attempt to put the subject on a modern experimental basis. Since then much has been done, especially in the United States. We can hardly hope to know very clearly what an ape is thinking about as he looks out from under his wrinkled brow. "*Les animaux ne nous font pas des confidences,*" as Reinach has truly observed. But scientific observation and experimentation are throwing light on the educability of apes and other animals and on the way in which they appear to learn. They have already proved that the chimpanzee can readily master a vast number of acts over and above anything that his ancestors have ever known in the jungle. He is marvelously teachable. He appears to learn by "trial and error" and by a process which we may term "trick psychology," stimulated by rewards and punishments. The exact nature and the rôle of "imitation" is not yet very clear, but I think that no one can doubt its importance. Now the obvious question forces itself on us, Do we not all learn for the most part much as the chimpanzee learns, by trial and error and by mastering tricks, stimulated by rewards and punishments, or by "imitation"? The answer will be, I am convinced, that almost all our education is based on modified simian principles. To a believer in the continuity of history that should be a cheering discovery, humiliating as it is in other respects.

I am aware that to most students of history the results of com-

parative psychology will seem at first sight too remote to have any assignable bearing on the problems that face them. This impression is, however, erroneous, at least where questions of the character and transmission of culture are involved. We can not understand the nature of culture as distinguished from our merely animal heritage without some notion of animal psychology. I can not but think that the historical student will deal far more intelligently with the changes of thought, the development of institutions, the progress of invention, and almost all religious phenomena when he learns to distinguish between the higher and rarer manifestations of peculiarly human psychology and the current and fundamental simian mental modes upon which we still rely so constantly with the assurance of ancestral habit.

I will give but a single illustration from this field of speculation. Gabriel Tarde's great discovery is that every minutest element in civilization, every atom of culture that we have, over and above our animal outfit, must either be handed on from one generation to the next, or else be rediscovered or lost. Now it should be part of the historian's business, and no unimportant part, to follow out the actual historical workings of this rule. Civilization is not innate, but transmitted by "imitation" in the large sense of the word. A word, or a particular form of tool, or a book, will die out as surely as an organism unless it is propagated and regenerated. Let us apply this law in a single case. How little addition to the general disorder and to the chronic discouragements of learning is necessary to account for the fatal disappearance of Greek books in the West after the dissolution of the Roman Empire! Suppose only half as many people in Gaul learned Greek in the time of Gregory of Tours as had known it in Constantine's time. How greatly would this increase the chances of the complete disappearance of Xenophon's "*Cyropædia*" or Euripides's "*Elektra*"!

In bringing this paper to a close I am painfully conscious that it may suggest serious dangers to some thoughtful readers. The historical student may be ready to grant that he has neglected the influence that discoveries in other fields should have on his own conclusions; but how, he will ask, is he to find time to acquaint himself with all the branches of anthropology, of sociology, political economy, comparative religion, social psychology, animal psychology, physical geography, climatology, and the rest? It is hard for him even to keep up with the new names, and he has a not unnatural distrust of those who tender him easy explanations for things that they still know so little about. Some of the more exuberant representatives of the newer social sciences remind the historian disagreeably of the now nearly extinct tribe of philosophers of history, who flattered

themselves that their penetrating intellects had been able to discover the wherefore of man's past without the trouble of learning anything about it.

But the historical student who classes the modern social sciences with the old and discredited philosophy of history is making a serious mistake. The philosophers of history sought to justify man's past in order to satisfy some sentimental craving, and their explanations were, in the last analysis, usually begotten of some theological or national prejudice. The student of society, on the contrary, offers very real and valuable, if obviously partial, explanations of the past. It is true that he sometimes forgets what Hume calls the "vast variety which nature has effected in her operations," and tries to explain more than his favorite cause will account for, but this ought not to blind us to his usefulness.

It seems to me that, like the geologist, the physiologist, and the biologist, the historian is forced to make use of pertinent information furnished by workers in other fields even if he has no time to master more than the elements of the sciences most nearly allied to his own. He may use anthropological and psychological discoveries and information without becoming either an anthropologist or a psychologist. These discoveries and this information will inevitably suggest new points of view and new interpretations to the historian, and will help to rectify the old misapprehensions and dispel the innumerable ancient illusions which permeate our older historical treatises. Above all, let the historical student become unreservedly historical-minded, and avail himself of the genetic explanation of human experience, and free himself from the suspicion that, in spite of his name and assumptions, he is as yet the least historical, in his attitude and methods, of all those who to-day are so eagerly attempting to explain mankind.

It may well be that speculation in the newer fields has often far outrun the data accumulated, and the historical student has not infrequently been tendered explanations of the past which he has done well to reject. The sociologist, anthropologist, and economist have doubtless often thought too fast and too recklessly, and this has engendered an excessive reserve in the historian who has sometimes flattered himself on not thinking at all. But there is, in the long run, more risk in thinking too little than too much, and the kind of thought which I have ventured to recommend in this paper should serve, if judiciously practised, greatly to strengthen and deepen the whole range of historical study and render its results far more valuable than they have hitherto been.

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THE BASIS OF REALISM

“THE Program and First Platform of Six Realists,” which appeared in this JOURNAL last July,¹ gives expression to a growing movement in philosophy in a way which deserves the gratitude of all who are in sympathy with that movement. As I find myself in almost complete agreement with the “six realists,” I have thought it might be desirable to attempt on my own account a somewhat similar statement of my philosophical opinions.

The fundamental doctrine in the realistic position, as I understand it, is the doctrine that relations are “external.” This doctrine is not correctly expressed by saying that two terms which have a certain relation might have not had that relation. Such a statement introduces the notion of possibility and thus raises irrelevant difficulties. The doctrine may be expressed by saying that (1) relatedness does not imply any corresponding complexity in the *relata*; (2) any given entity is a constituent of many different complexes. Each of these propositions requires some expansion.

1. The view which is intended to be denied by this proposition is the view that, whenever a term a has a certain relation R to a certain other term b , that implies some element in a in virtue of which it has the relation R to b . It is usual in this connection to speak rather of the “nature” of a than of a , and it is not clear whether the “nature” of a is or is not identical with a ; but in any case, this “nature,” according to the view we are denying, is complex, and contains a constituent which expresses or accounts for a ’s relation to b . Writers who advocate the view in question do not state what they mean by the “nature” of a . Three views may be suggested: (α) We may suppose that the “nature” of a is identical with a . In this case, we affirm, on the basis of a *reductio ad absurdum*, that the contention that a ’s “nature” must contain a constituent which expresses or accounts for a ’s relation to b , is demonstrably false. (β) We may suppose that a ’s “nature” is all the propositions that are true of a , or all the complexes of which a is a constituent. In this case, the view in question becomes a truism, but fails to yield any of the consequences commonly deduced from it. (γ) We may define the “nature” of a as its predicates or attributes, as opposed to its relations. This view requires a word of explanation. We are accustomed to dyadic, triadic, tetradic . . . relations. A dyadic relation may be defined as one which *can* occur in propositions containing only two other terms, *i. e.*, as one such that the simplest propositions in which it occurs contain only two other terms. Similar defi-

¹ Vol. VII., No. 15, pp. 393-401.

nitions apply to triadic, tetradic . . . relations. Now there may also be—I do not say there are—what we may call *monadic* concepts, *i. e.*, concepts which can occur in propositions having only one other term. Such concepts may be called predicates or attributes. It is of course the case that, whenever a subject has a predicate, there is a dyadic relation of subject and predicate, but it does not follow that there is not also a proposition in which the predicate is merely predicated. The analogy of dyadic relations will make this clearer. Whenever a has the relation R to b , there is a triadic relation of a and R and b , but in this relation R occurs as a term of the relation, not as the relating relation of the proposition. Similarly, if there are monadic concepts, the propositions in which they are said to have the relation of predication to their subjects will not be identical with the propositions in which they are actually predicated. Assuming, then, that there are monadic concepts, the “nature” of a may consist of all those monadic concepts which are predicable of a . Then the view that a ’s “nature” contains a constituent which expresses or accounts for a ’s relation to b will be the view that there is a monadic concept predicable of whatever has the said relation to b and of nothing else. More generally, the view in question may be stated as follows: “Every propositional function of one variable is formally equivalent to some monadic propositional function,” where a monadic propositional function is one which attributes a monadic concept to a variable subject. It is no concern of the doctrine of external relations either to affirm or deny the above view, though we must contend that there is no reason to suppose the above view to be true. We must, however, deny that a term is composed of all the monadic concepts which are predicable of it, *i. e.*, that a particular subject is identical with the sum of its predicates.

I do not for a moment wish to suggest that any one of the above three views (α), (β), (γ), is held by any of the opponents of external relations. They, I believe, hold a confused mixture of all three, and would not continue their opposition if the confusion were removed. My purpose in setting forth the above three views was to make it clear what it is that I affirm, and what it is that I deny. The view I advocate is, that a term a may have a relation to a term b without there being any constituent of a corresponding to this relation. If this were false, simple terms could have no relations, and therefore could not enter into complexes; hence every term would have to be strictly infinitely complex.

2. Authors who deny external relations hold, in addition to the doctrine discussed above, that it is impossible for precisely the same term to be a constituent of two different complexes, or to occur in two different propositions. They say that if A is the father of B and

the son of C, it is not strictly the same entity which is father and son, but that it is "A *quâ* father of B" who is the father of B, and "A *quâ* son of C" who is the son of C. This doctrine also is denied by those who advocate external relations. They would argue that "A *quâ* father of B" is a complex containing the constituent A, and "A *quâ* son of C" is also a complex containing the constituent A. Thus the attempt to avoid an identical constituent in two complexes breaks down. The two parts of the doctrine of external relations together constitute the justification of analysis, and the denial of the view that analysis is falsification.

The importance of the question as to the value of relations lies in the fact that current arguments against realism and pluralism almost all depend upon the doctrine of internal relations. When this doctrine is rejected, the question as to the number of things that exist becomes purely empirical, but no empirical fact is more certain, if *a priori* refutations fail, than that many things exist. I should therefore prefer to call the philosophy which I advocate "pluralism" rather than "realism," because realism, in most of its accepted uses, involves long and difficult arguments which might be rejected without contravening anything that was said above as to the nature of relations. Nevertheless, if any case is to be made out against this or that form of realism on the basis of external relations, it will have to be a new case, based upon quite different arguments from those hitherto employed by idealists. I do not myself believe that any such case can be made out; at the same time, all the questions involved seem to me to demand fresh discussion, and what seems to me so far firmly established is a logic and a method, rather than any positive metaphysical results. What is plain is that all arguments based on the contention that knowing makes a difference to what is known, or implies a community or interaction between knower and known, rest upon the internal view of relations, and therefore fail when this view is rejected. It is true there is another argument for idealism, namely, the argument which Professor Perry calls the "egocentric predicament." This argument is, in brief, that everything must be known, because we can not know of anything else. This is a foolish fallacy, which would equally prove that I must be acquainted with everybody whose name is Smith. Sometimes, more plausibly, it is urged merely that we can not know that there are things we do not know; but this view rests upon a wrong analysis of general propositions, in fact upon the same wrong analysis which led Mill to regard Barbara as a *petitio principii*. When we know a general proposition, that does not require that we should know all or any of the instances of it. "All the multiplication-sums that never have been and never will be thought of by any

human being deal with numbers over 1,000'' is obviously a true proposition, although no instance of such a sum can ever be given. It is therefore perfectly possible to know that there are propositions we do not know, in spite of the fact that we can give no instance of such a proposition. Thus it is fallacious not merely to argue that everything must be known, but even to argue that we can not know that there are things which we do not know. This instance, like many others, illustrates the elementary blunders which philosophers have made owing to their neglect of logic.

To sum up: The primary philosophic effect of the logical doctrines which I share with the "six realists" seems to me mainly negative: it shows that most current philosophical argument is fallacious, and that many questions which have been supposed amenable to *a priori* treatment must be dealt with empirically, since logic leaves the alternatives undecided. At the same time, in all those matters in which philosophy has been led to contravene science and common sense, there is a presumption, if the arguments of philosophers have been unsound, that their conclusions have been false; hence the logic in question naturally associates itself with pluralism and realism rather than with monism and idealism. Moreover, by the rejection of *a priori* constructions the way is opened for philosophy to become inductive, and to begin the patient cooperative accumulation of results by which the triumphs of science have been achieved.

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REVIEWS AND ABSTRACTS OF LITERATURE

Mysticism in Modern Mathematics. HASTINGS BERKELEY. Oxford University Press. 1910. Pp. 258.

The title of this work will, to many, appear wantonly paradoxical. Mathematics, above all branches of knowledge, is usually credited with the attributes of absolute certainty and of logical precision. Nevertheless, Mr. Berkeley successfully maintains that it contains elements not incorrectly described by the term mystical. The term requires definition. Mr. Berkeley's meaning will be gathered from the following passage.

"What are we to think of, how shall we characterize, a mental process which might, briefly and in general terms, be indicated thus: Explanation of the derivation, from a primary conception (say that of quantity, or again, of space), of another conception, followed by questions such as these: What is, or what is the nature of, this derived conception? Or—say that Abracadabra is the name of the derived conception—What is the meaning of Abracadabra? The questions imply that the nature of a

derived conception is not made manifest in the account of its derivation, that the meaning of a term may be something other than that which we have agreed to assign to it. Yet, if a derived conception really is present to the mind, to ask what this conception is can only be an indirect way of asking for an explanation of the process by which we have come to form it, that is, of its derivation; and, if we have given the name *Abra-cadabra* to a certain idea, to ask, What is *Abra-cadabra*? is to imply that the meaning of the term is not that idea. But select what term you please to characterize a mental process such as this—I can find none more appropriate than ‘mystical’—and it will probably come to seem inappropriate when you learn further that a notion which is derived, rather than that from which it derives, is the fundamental notion of the subject of thought which involves them both” (p. 64).

To the author, mysticism is a form of illusion, nothing more. In his preface he defines pragmatism as a “methodical and determined attempt to rid philosophy of mysticism.” Throughout the book mystical and mystical illusion are used as synonymous terms. It should be remarked at the outset that this attitude is hardly adequate to the complexity of the problem before us. It is one thing to point out “mystical” tendencies in mathematics; it is quite another to condemn them as mere illusions of symbolism. Where mysticism is to be found, even in the most unlikely places, let us, by all means, recognize it as such; and let us not confuse it with the factual elements with which it is bound up. But the author’s attitude of absolute condemnation requires thorough philosophic substantiation.

The volume is divided into three sections entitled respectively: “Thought and its Symbolic Expression,” “Imaginary Quantities in Algebra and Imaginary Loci in Geometry,” “Metageometry.” The first section is somewhat loosely connected with the remainder and calls for no special comment.

The second section is dominated throughout by the author’s idea of mysticism. In algebra, he deals first with negative quantities and then at considerable length with $\sqrt{-1}$. His conclusions are somewhat vague. He endeavors to show that the geometrical conception of $\sqrt{-1} \times \sqrt{-1}$ becomes *arithmetically* intelligible by stating it in the form $+1: \sqrt{-1}:: \sqrt{-1}: -1$ (pp. 125-6). Undoubtedly this form does illustrate more clearly than the sign of multiplication the relation of perpendicularity. But the arithmetical intelligibility of the process of squaring a quantity which it is not allowable (according to Mr. Berkeley) to isolate, is by no means clear. The problem does not appear to be solved by informing us that “they are then at once recognized as factors or constituent parts of actual expressions, algebraically symbolic, interpreted in terms of generalized number and abstract quantity.” Mr. Berkeley apparently means, though his meaning is obscure, that expressions like $\sqrt{-1} \times \sqrt{-1}$ are similar to dy/dx , which represents an operation. Only conventionally and for specific purposes do we separate dy and dx . Unfortunately for the theory, the sign of multiplication

considered arithmetically does connote the existence of separate quantities to be multiplied, and is not, in any other sense, intelligible. Moreover, their use in algebra depends simply and solely on the convention that they can be treated as separate quantities.

Mr. Berkeley's meaning would have been much clearer if he had dealt with the subject of fractional and negative indices. $a^{\frac{1}{2}}$ and a^{-2} can, in a sense, be called mystical expressions. They have no meaning until we ask, in Mr. Berkeley's words: "What do they mean?" Then we are able to discover for them one interpretation and only one, in this case, purely arithmetical. Why can the mystical and meaningless expression 2^{-2} be used as equivalent to the plain, every-day $\frac{1}{4}$?

The treatment of imaginary points and loci is more explicit, and, whether or no it be philosophically adequate, may assist the elementary teacher, who often finds it difficult to show that this section of analytical geometry represents any form of practical utility. The following quotation will indicate the author's treatment:

"The process, thus far, may be said to exhibit the mathematician at play. To regard it as furnishing a geometrical interpretation of algebraic imaginaries in the usual sense of the word interpretation, or in any sense that would ultimately prompt the question: What is the meaning of an imaginary point? would be to take a *jeu d'esprit* seriously, or to be unconscious or oblivious of the fact that the process is a subtle game in which we play at interpretation, pretend to interpret. If we are conscious of this fact we shall not ask the question; nor shall we suppose that we have found an interpretation in pretending to find one. The game has 'serious scientific value' only if, when we say that the roots of this quadric equation symbolize either real or imaginary abscissæ, we can in this paradoxical phraseology call attention to some geometrical property involved in the system of the circle and the straight line which is independent of their having, in any point or points, coordinates in common, independent, that is, of the straight line being secant or non-secant of the circle."

For purposes of instruction, the exposition will require simplification; but every teacher will appreciate the advantage of being able, where possible, to postpone the consideration of philosophical problems by pointing out that analytical treatment does call attention to new geometrical properties.

The best section in the book is that dealing with metageometry. The author makes an admirable point at the outset by remarking that there is an absurdity, "even a contradiction," in the current term properties of space. He also points out clearly and rightly that the admission of the possible objective existence of non-Euclidean space involves a rejection of our idea of direction. ("—each conception of space must involve a notion of direction peculiar to itself and not comparable with the others.") With Cayley he agrees that the postulate of parallels is self-evident.

Those who uphold this view, however, are logically bound either to assert the self-evidence of the complicated fifth postulate of Euclid (commonly called the twelfth axiom) or to find some satisfactory substitute.

Up to the present the clearest axiom of parallels is that of Playfair. Mr. Berkeley's substitute is worthy of attention. He divides the Euclidean postulate into the following axioms:

"a. Straight lines which are identically inclined to the same straight line are not mutually inclined.

"b. Straight lines which are not mutually inclined are identically inclined to the same straight line."

These should be noted for what they are worth, but it is very doubtful whether they will be considered any simpler, if as simple, as Playfair's axiom.

One other feature of the book it is necessary to mention. The sentences are unnecessarily involved and the whole work is loosely constructed and difficult to read. In many passages the author's meaning is far from clear. For an original essay the quotations are too numerous. As the quotations often convey a more vivid impression than the text, it becomes still more difficult to follow the connection of ideas. Those who, like the technical mathematician, will not agree with the author's main conclusions, may infer confusion of thought from vagueness of expression. The volume would be greatly improved by condensation, by the removal of unessential matter, and by the inclusion of the discussion of other topics (such as fractional and negative indices) which have a direct bearing on the author's line of thought.

Notwithstanding these defects, Mr. Berkeley's essay is worthy of the consideration of the technical mathematician and may be accepted as an interesting addition to the literature on the philosophy of mathematics. Such a volume constitutes further evidence of the growing dissatisfaction with the dogmatism of the mathematicians when they mistake their conceptualisms for objective reality, and when they put forward as probable conclusions which conflict with the dictates of common sense.

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Spinoza's Short Treatise on God, Man and his Well-Being. Translated and edited, with an introduction and commentary and a life of Spinoza.

A. WOLF. London: Adam and Charles Black. 1910. Pp. cxxviii + 246.

As indicated in the title, this work consists of four parts, the life of Spinoza (pp. xi-cii), the history of the "Short Treatise" (pp. ciii-cxxviii), an English translation of the "Short Treatise" (pp. 1-162), and a commentary on the same (pp. 165-240).

The life is admirably done. It is certainly in many respects, probably altogether, the best that has yet appeared in English. The author's birth and religious association have given him certain advantages which he has well utilized in the presentation of the earlier part of Spinoza's life. The account, as a whole, is complete and well told. Little of the source material, as such, has been presented, the author assuming that Freudenthal is sufficiently available to make such presentation useless. Consid-

ering the purpose of Professor Wolf in presenting the life here, we can not ask that a different treatment had been followed. It would seem, however, that the English reading public might have access to more of the sources than have heretofore been given. For example, the inventory of Spinoza's library, so far as this reviewer can recall, is not available in any English publication.

The history of the "Short Treatise" is good. "The beginner," to quote Professor Wolf in another connection, "may omit on a first reading" this part of the book. All other students, however, will enjoy the clear statement of how much—and how little—is known of the making of this long-lost book. The facsimile reproductions of Monnikhoff's writing and of the pages from the two manuscript texts afford most convincing proof of the dependence of *B* on *A*, and of Monnikhoff's connection with both, complete in the one case, partial and editorial in the other. One could hardly ask a more interesting or more convincing exposition of a point in textual criticism. We must note, in passing, that in the "literature on the 'Short Treatise'" (p. cxxvii) no mention is made of the English translation of the "Short Treatise" by Lydia G. Robinson (Chicago, 1909), which appeared some months before the date appended to Professor Wolf's preface.

The English translation of the "Short Treatise" is of course the heart of the book. While every student of Spinoza, worthy of the name, will willingly, and easily, familiarize himself with Spinoza's Latin, there are many to whom the *Nederduitsche* of the *Korte Verhandelng* proves a serious hindrance. Good translations in other languages do not meet the needs of English readers. One's individual translation (perhaps halting) of a German translation of a *Nederduitsche* translation of a Latin original is nearly as bad as the middle age approach to Aristotle *viâ* Averroës. Happily for us of the English tongue, a part of this circuitous route has now been cut out.

Moreover, we have here not merely a translation of van Vloten and Land's second edition, but besides a reexamination of the manuscripts. How much actual divergence Professor Wolf has made from the published text does not of course appear in a cursory examination of the translation; but the serious student will be glad to feel the additional security furnished by this independent textual study. The translation follows, and properly, the text of *A*; but all variants therefrom in *B*, as well as the respective sources of the footnotes, are indicated by a suitable system of signs.

The translation is in good idiomatic English. The sentences are as clear as Spinoza's involved scholastic style allows. While the accuracy of the reading can be determined only by extended comparison, what examination I have made convinces me that, on the whole, the translation is close to the original and true to Spinoza. Some instances appear, however, of a doubtful choice of terms. In the note on page 63 (vv and L, iii, 38-9), Professor Wolf several times uses *real* as a translation of *wezentlijk zijnde*. For the popular reader, *real*, in one of its current

senses, may be a fair interpretation of Spinoza's meaning, but it is hardly a fair rendering of his terminology. The more serious student will prefer a transfer of Spinoza's own terms, with all their difficulties, to any interpretation. Similarly the word *gebeulijke* (vv and L, iii, 28) is on page 48 rendered *accidental*. The comment on this passage is a true exposition of Spinoza's meaning; and the modern popular meaning of *accidental* may justify its use in the translation. None the less, the student of Spinoza's terms will feel somewhat of a shock to find this word doing this service for Spinoza even in translation, so far is it removed in meaning from *accidens*, the nearest cognate used by Spinoza. The word *wezenheid* gives peculiar difficulty, being rendered by four different words in as many successive occurrences. On page 136, line 7, it appears as *reality*; on page 137, line 4, as *existence*; on page 140, line 16, as *character*; and on page 141, line 26, as *essence*. If the original Dutch translator rendered both *existentia* and *essentia* (to say nothing about *reality* and *character*) by one Dutch word, he either had a meager vocabulary at his disposal, or he was indifferent to Spinoza's distinctions.

The reviewer would not insist, however, on the criticisms of the terminology. By others it may not be counted desirable to have Spinoza's (Latin) terms represented by their English cognates, and if desirable, it would be uncertain of attainment; for three languages set a difficult task. But whatever may be said on this particular point, there can be no difference of opinion as to the general excellence of the translation. All will agree that this is admirable.

The last fourth of the book is a commentary on the "Short Treatise." Here Professor Wolf's studies in Jewish philosophy as well as in the more usual Spinozistic literature put both beginner and advanced student in his debt. Not all particular points, of course, will be accepted. The reviewer questions, for example, that "nature" (p. 167) more commonly "means the material world, etc." His own notes, which he thinks fairly inclusive, show about as many instances of "nature" signifying "'character' or 'essence.'"

In conclusion, it must be said that we have in Professor Wolf's book an exceedingly valuable contribution to the literature on Spinoza. No English reading student of Spinoza can afford to be without it. The presswork and proofreading are excellent. A five-page index, fairly inclusive, completes the whole.

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JOURNALS AND NEW BOOKS

THE INTERNATIONAL JOURNAL OF ETHICS. October, 1910. *The Prediction of Human Conduct: a Study of Bergson* (pp. 1-15): B. BOSANQUET. — An exposition and criticism of Bergson. The important principle is that not foreknowledge but reduction is the impossible and

objectionable thing. You can predict for others in as far as you are the same with them. And, contrary to Bergson's agnosticism, we can be and are the same with others in a considerable degree. *The Idealism of Rudolph Eucken* (pp. 15-22): S. H. MELLONE. - Eucken's philosophy is a genuine contribution to the understanding of what is called the mystical element in religion and life. *Personality and a Metaphysics of Value* (pp. 23-36): J. A. LEIGHTON. - Logical, ethical, esthetical, and religious valuations can have no absolute basis unless personality have an absolute basis. The ultimate foundation of spiritual values must reside in a supreme self or nowhere. *On Thinking About Oneself* (pp. 36-51): HELEN WODEHOUSE. - An analysis of the natures of the egoist, the self-satisfied person, the *poseur*, and the self-consciously moral man. *Is Belief Essential in Religion?* (pp. 37-67): HORACE M. KALLEN. - Belief is no more essential to religion than to any other human institution. Religion is belief, but it is religious belief only as it is belief in the reality of an actual personal God powerful for the excellent outcome of human destiny. *Two Modern Social Philosophies* (pp. 68-82): ERNEST L. TALBERT. - A comparison of the nature and genesis of socialism and anarchism. *Book Reviews*: Rudolph Eucken, *The Problem of Human Life*: ARTHUR O. LOVEJOY. J. G. Hibben, *The Philosophy of the Enlightenment*: J. G. CREIGHTON. E. Boutroux, *Science and Religion in Contemporary Philosophy*: J. H. MURHEAD. George Galloway, *The Principles of Religious Development*: S. H. MELLONE. Irving King, *The Development of Religion*: JAMES B. PRATT. T. Clark Murray, *Handbook of Christian Ethics*: DAVID PHILLIPS. Henry Jones, *Idealism as a Practical Creed*: H. RASH-DALL. James Bryce, *The Hindrances to Good Citizenship*: G. P. GOOCH. William I. Thomas, *Source Book for Social Origins*: C. E. PARRY. Henry Jones, *The Working Faith of a Social Reformer*: R. S. VARLEY. B. Kirkman Gray, *Philanthropy and the State or Social Politics*: W. J. ROBERTS. J. A. Hobson, *The Crisis of Liberalism*: W. J. ROBERTS. F. W. Headley, *Darwinism and Modern Socialism*: G. P. GOOCH.

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NOTES AND NEWS

PROFESSOR PAUL SHOREY, of the University of Chicago, will give six lectures on "The Platonic Tradition in Philosophy and Literature" at Columbia University. His program is as follows: March 16.—The greatness of Plato. The difficulty of interpreting him rightly. The question of his sources, and the extent of his originality. The anti-Platonic tradition. Its causes. Influence of Plato on the philosophic schools of antiquity other than neo-Platonism. March 21.—Neo-Platonism. What it is psychologically. What it is historically. The Academy. The neo-Pythagoreans. Philo Judæus. Plotinus and his successors. Renaissance and modern neo-Platonism from Picinus to Maeterlinck. March 23.—Platonism and Christianity. Resemblances and differences. Platonism of the Christian fathers. Platonism of the Middle Ages. Platonism as the source of "heresies" and the ally of "liberal" Christianity. Schleiermacher. Cousin. Jowett. Matthew Arnold. March 24.—The Renaissance and after. The revival of learning and of Platonism. Neo-Platonic coloring. Platonic mysticism. Platonic love. Platonism in English poetry. March 27.—From Bacon to Nietzsche. Platonism and the history of modern philosophy. A study of the analogies and the actual historical connections. March 28.—The nineteenth century and after. The German renaissance of Greek a revival of Platonism also. The new Platonic scholarship. Platonism in nineteenth century literature and thought. Types of Platonist: Shelley, Coleridge, Mill, Arnold, Ruskin, Jowett, etc. "The passing of Plato."

DURING the current month Professor James T. Shotwell delivered a course of three lectures at Columbia University entitled "Mystery, Magic, and Theology: A Study in the History of Religion." The subjects of the several lectures were "What is Religion?" "The Science of Mystery," and "Magic and Theology."

Two Sigma Xi lectures, one on "Attention" and one on "Types of Mind," were given at the University of Minnesota, on February 9 and 10, by Professor E. B. Titchener, Sage research professor at Cornell University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE EMANCIPATION OF INTELLIGENCE

I PUT the following case as directly and as simply as I can, and I put it not because I can prove it—which I can not—but because I believe it. The dogmatic manner of statement is for convenience and brevity.

I

If man had not, in the earlier stages of his history, found the world full of precarious ambiguities, there is no reason to suppose that the thing called intelligence would ever have been developed. Men thought about the things that it was important they should think about, food, fighting, and offspring. And very important things like these made the acquisition of mana, the control of magic, and the propitiation of deities indispensable. Thus, although primitive man inhabits a world that is sufficiently complex, he nevertheless proceeds to make it more complicated by the addition of elements that constitute his superstition.

It is enough merely to refer to the intimate connection between early social organization and religion, to the theory of animism and especially to the attempts now being made to define a "preanimistic stage," to the theory of totemism, to the constantly increasing study of primitive magic. What we have learned to call the supernatural flourishes like a jungle on certain early levels of culture, and to the extent that it substitutes magic and the propitiation of deities for the control and use of the energies of nature it makes men blind to the primary conditions of progress. For anything that interferes with intelligence in its natural business is, to that extent, a burden to the mind, and a point of view which leads us to overlook the causalities resident in particular things does just that; for those causalities are the resources upon which every one has to fall back to accomplish anything whatever.

This may sound like writing down the supernatural as a mere obstacle in the way of progress. Nothing of the sort is intended. The service rendered by the supernatural to politics and to art is

not only granted but insisted upon. The more we can say for the benefits of the Christian religion to European culture, the better for my present thesis. Every laudation of the social value of religion tries to make it clear that the function of the supernatural is so important as surely to preserve it in the minds and hearts of successive generations.

How the supernatural has provided an ever-recurring theme in philosophy may be read in the history of either. In the manipulation of that theme, however, three major ideas stand out, God, the soul, the universe. It is easy to see what a rôle these have played if we only consider what is left when we drop out all speculation about God, all speculation about the soul, and all speculation about the universe. Now for those who believe that the supernatural has played its part as a subject-matter of technical speculation, that it is not merely passing, but has passed, arguments for and against theistic premises must appear as a mere waste of ingenuity.¹ Because, however, of their dramatic career in the history of culture the three above-mentioned ideas are fascinating topics of inquiry, both with regard to their origins and to their influence. Such an inquiry must not be looked upon as a contribution to the study of the validity of those ideas. Literally speaking, they have no validity as descriptions of existence revealed to perception.

That the ideas of God and the soul had their origin in the animism of primitive culture may be taken as proved. The idea of the universe, however, is more troublesome because its history has not been sufficiently traced. I venture, therefore, a few suggestions more for the sake of indicating a line of inquiry than of laying down a conclusion.

The concept of the universe is not, of course, to be attributed to animism, but it is an interesting question whether it may not be traceable to primitive observation. The idea to which I refer is that of a quantitative whole of existence, a bounded totality of existence; there is so much of it and no more, just as there is so much and no more of an apple. Now if we keep clear of ontological arguments and make empirical observation our criterion for judgments about existence, then the idea of a bounded universe is no longer required on *logical* grounds, and it remains to be seen whether it is justified by observation. I wonder whether the concept of the universe seems important to one who passes his days and nights in, let us say, the

¹ At this point I will say, to avoid ambiguity, that I presuppose throughout the only evidence of existence to be the evidence of empirical discovery. Existence is precisely the thing that can not be proved by any *a priori* method. To define anything as supersensuous is to define it as a type of being that must forever elude discovery as a case of existence.

Lick Observatory. Yet before the invention of optical instruments, when every man found himself at the center of a celestial sphere, what could be more natural than to regard the universe as the most obvious fact? There is the outer shell spangled with bits of fire; within it is contained all the rest there is. The cosmology of the Pythagoreans, of Aristotle, of Thomas Aquinas, did provide just this conception of a universe. Dante could describe his passage with Beatrice from sphere to sphere in good faith. That conception of concentric spheres may properly be called the conception of a universe. But the concentric spheres no longer serve to describe the earth and the heavens as we observe them. It is no longer the outer sphere beyond which God abides that limits the range of existence, but the technique of grinding lenses.

Very probably the idea of the universe, in just the form in which I criticize it, does not constitute now a part of any philosopher's equipment. Yet the concept of totality occurs in a strongly reminiscent way. The recent book² of Professor James was directed against the idea of a monistic universe which was and is taken very seriously as a description of existence. We still find allusions to "the all," "the all of things," and confidence in the inevitability of that conception is, in certain quarters, so undisturbed that deductive consequences are seriously defended, consequences which are not put forward as mere exercises in formal logic, but as well-grounded conclusions about matters of fact.

A tradition which might prove difficult to identify with that of the universe, as I have described it, is the neo-Platonic tradition of eventual unity. This tradition too has carried the conceptions of cosmic totality and unity. It may be, however, that this abstract conception owed its vitality to the fact that the impression of an empirical universe was so deep-seated. In any case, the idea of the universe is lodged securely in the monistic absolute, and this brings us to the later stage of the three ideas.

It is probable that the conception of a totality of existence would long since have lapsed from use had it not been for a curious and dramatic episode. The theistic ideas that once called for no arguments needed in time the proofs of metaphysicians. That meant, in fact, to give them a new identification. Has such a technique of sophistry ever been displayed in the service of any other vanishing idea? How the conceptions of God and the universe rescued each other by becoming identified one with another in the conception of the absolute, is matter of history. But what rendered this identification so convincing to the metaphysically minded was the assistance

² "A Pluralistic Universe."

rendered by the remaining conception, the soul, attenuated by this time to the Kantian concept of consciousness. The concept of consciousness with its resulting "problem of knowledge" gave a new lease of life to theological metaphysics by producing, in conjunction with the other two ideas, the monistic idealism which has been so successful in carrying the supernatural.

A proposal to recognize in the concept of an existential totality, in the concept of the absolute, and in the idealistic concept of consciousness three survivals, and to admit that dialectical problems based upon them are problems about purely imaginary things which our own range of perceivable facts does not include, may seem the merest philosophical anarchy. And if the proposal appears to be supported by evidence that commands respect, those who are interested in the future of philosophical studies may feel dismay at the prospect. For what a catalogue of problems disappears! But the thing has happened before. Of course the orthodox metaphysicians in the universities must have thought that Descartes ignored most of the problems, and just as the Cartesians had to break away from the metaphysics of the Roman Catholic institution, so we have to cut loose from the metaphysics of Protestant speculation and from whatever is simply incidental to it.

The above three ideas have been the source of derived problems. The "problem of evil" assumes a whole apparatus of theological doctrine. But this is not the end of it; theories call forth opposing theories. Now a position taken to resist another position is an alternative position on a certain question. Is the moon made of roquefort or gorgonzola? Do the souls of unbaptized infants go to hell or to heaven? Is the universe one or many? If a certain line of philosophy happens to be a consideration of merely imaginary problems, the criticism which takes that philosophy seriously, which takes it, *i. e.*, for a discussion of real problems, is itself not a discussion of real problems. The fact that the former is a well-articulated dialectic does not give its dialectical implications any relevance to physics. The issue of a merely polemical philosophy is not in actual inquiry but in what its own advocates declare to be error. In practical affairs, this gives a real issue, but in speculative ones its effect is to make the subject-matter of the critic dependent upon the propositions which are anathema to him. The kind of realism that exists only as a criticism of monistic idealism seems to me to be in this position. The Oxford movement that calls itself "humanism" is a movement in the direction of freedom; it is full of the promise of good things; and yet there is a clinging to the animistic presuppositions upon which the idealism it criticizes is founded. That idealism is a natural evolution of the three conceptions noticed above, and any

one who wants assurances about God, the soul, and the universe should look to the philosophy which the interest in those ideas has generated. Fifty years, however, have elapsed since the publication of "The Origin of Species"; forty have elapsed since the appearance of "Primitive Culture," and twenty since the appearance of "The Golden Bough." Whatever may be the shortcomings of Tyler, Frazer, and their co-workers, there is no longer anything inexplicable about the existence in the world of a type of philosophy that begins with a problem of knowledge and ends with the absolute.

Now, in the criticism of idealism at present going on, there is, I think, much misrepresentation and much failure to appreciate its real value. That is partly the fault of our contemporary idealists. Instead of giving us the positive content that idealism has done so much to develop—large perspectives in history, stimulating points of view in ethics and politics—they have made themselves the apologists of the supernatural. They operate, in the main, with the idea of the absolute, the concept of consciousness, and with a conception of knowledge that results from the context established by the former two. The philosophical situation that results is naturally very unsatisfactory to those who do not regard the saving of the supernatural as the first task of philosophy. For that the real message of idealism has been confused by its alignment with this undertaking is now beginning to be recognized.³ So long as we are interested in human experience and its problems, *as such*, we can best describe *that* subject-matter in terms that are frankly naturalistic. Why should anybody incline to a conception of reality which puts the label of appearance or some other derogatory tag upon all empirical distinctions unless he aims to support a claim that the empirical world does not support? If the supernatural is really the theme of idealism it is not surprising that idealism is passing too. But its passing is attended with much confusion, as the many suggestions for improving philosophic method sufficiently attest.

II

The remedy for a difficulty depends upon the nature of the difficulty. That is why an inquiry like the present one may have some justification. What has happened is largely this: the subject-matter which was once supposed to be fact has been discovered to be not fact but ideas. The technique of ideas is dialectic. And since the subject-matter always was ideas, the technique of it always had to be dialectic. The ideas were, however, taken literally; people supposed they were investigating matters of fact, and therefore it was

³ Cf. Ralph Barton Perry, "The Cardinal Principle of Idealism," in *Mind*, July, 1910, p. 325.

inevitable that they should suppose their technique applied to matters of fact. This error in method was, however, supported by the circumstance that ideas born of the supernatural symbolized real values or affairs. For that matter, when real or supposed matters of fact find definitions that appear to be complete and satisfactory, the definitions are forthwith substituted for the facts and dialectic takes the place of empirical description. It is not necessary to suppose that final definitions have been secured in order to fall into the fallacies of scholasticism. So long as the ideal to be accomplished is supposed to be a body of permanently acceptable definitions, the ideal of philosophic method remains, consciously or unconsciously, unhampered dialectic. Now the whole scholastic tradition, circling forever about an element of dogma, perpetuated this ideal. And what other critical method could possibly be required by such a task as justifying the supernatural?

In proportion, however, as the impression gains ground that a traditional subject-matter is not fact but idea, the logical analysis of ideas appears to be important. Concepts formulated clearly for the sake of analysis and dialectical manipulation are now taken strictly; *i. e.*, they are deprived of whatever existential relevance (symbolical representative value) they once had. The tradition, however, persists that the subject-matter now formulated as concepts is a subject-matter of existence, and so the tradition that dialectic can reveal existence is more or less unconsciously nursed along. For the ideas that are analyzed are not treated merely as concepts, but as concepts having cognitive importance, and this in the context of a theory of knowledge based on the idea of a sensation. This is the stage represented by epistemology. The rather naïve handing out of dialectical arguments with the claim that they are inquiries into existence, under conditions determined by the disintegration of idealism, has resulted quite naturally in a state of things where no man quite understands what his neighbor in philosophy is talking about, and where there is a general demand that the grammar of the conversation be revised. Dialectic must be disciplined, we are told; dialectic must be made more expert. A juster observation would be, it seems to me, that dialectic must be made to mind its own business.

The trouble is not that dialectic is inexpert but that in its applications it becomes either irrelevant or artificial. If it is applied to existence it is irrelevant.⁴ If it is applied to ideas saved out of the debris of animistic idealism, the resulting problems may be dialec-

⁴ This is, of course, an extreme statement. My meaning is that dialectical derivatives of accepted propositions may serve to direct experimental research, but can be substantiated only by experimental verification.

tical but they are nothing else; that is, they are artificial because the motive behind the dialectic is an interest in existential metaphysics. It has been well pointed out⁵ that the contrast between straightforward mathematics and even the most distinguished proofs *more mathematico* in philosophy is the contrast between success and failure. The reason for this contrast ought to be evident enough. The mathematical method in philosophy has been used with the purpose of reaching conclusions about matters of fact, and it has been applied to ideas that did not lend themselves to dialectical analysis. To that extent the use of the method has been fallacious in purpose and unfruitful in subject-matter. The former defect needs no further explanation; the latter one, the unfruitfulness of the subject-matter, is due, at least in very great part, to the fact that it has consisted so much of disguised survivals.

Thus it has been a symptom of the passing of idealism that philosophers turned ardently to the logical analysis of concepts. And so long as this is the business of philosophy, of course mathematics is the ideal of philosophic method. The facts that I have referred to above—and I think they are facts—explain in a large measure the current faith in mathematics as a type of method. But is this faith so well grounded as has been supposed? Assuming that we wish to inquire into matters of fact and not merely to analyze definitions, the naturalist with his laboratory, not the mathematician, is the proper example for the philosopher.

III

In any program of reform in philosophy, one of the most important points, I believe quite the most important at the present time, should be that of distinguishing between genuine and artificial problems. The elimination of artificial problems was really the purpose of the men who initiated the so-called modern philosophy. They did indeed break away from the metaphysics of the Roman hierarchy but they did not break away from the supernatural. The definite katharsis of the mind by ridding it of animism is likely to be no easy matter, for although we do not so often, nowadays, read arguments about God, freedom, and immortality, we still meet with consciousness, appearance, and epistemology. If we distinguish between the kernel and the husk of idealism, it seems to me that the former might be called the autonomy of human interests, while the latter, which provided the features usually called distinctive of idealism, viz., subjectivism and absolutism, appears more and more as a transi-

⁵ Perry, "Realism as a Polemic and Program of Reform," this JOURNAL, Vol. VII., p. 338.

tory accident which, however, lent itself admirably to conserving the supernatural by identifying the theistic with the human. The autonomy of human interests is a real principle, which even the greatest absolutists, Plato, Spinoza, Hegel, have begun by recognizing. Idealism was regarded by its creators as a discovery which guaranteed a secure foundation to this principle, and completed the long process of the winning of freedom from authority. In so far, idealism was viewed as an emancipation of the mind, and in its day it was so. It is simply a fact of history that the husk which carried this message of emancipation was evolved out of the ideas of God, the soul, and the universe. That is, however, if any one likes, a detail, but it is a detail which throws a certain light. Now, in the onslaughts being made on idealism it is problems which have resulted from the analysis of the husk that occupy the embattled critics. What wonder, under the circumstances, that something seems to be the matter with philosophy, and that there is a growing demand that something be done about it! It seems to me that what is needed is not greater expertness in the dialectic of the old problems, but the recognition that much of the current subject-matter is thoroughly artificial. How much of it is so, no single individual ought to say very confidently. To find that out is part of the improvement so generally desired. The above-mentioned sources of artificiality ought to assist, however, in getting an orientation.

The fact that a problem is an ever-present theme in professional discussion is, at the present time, no guarantee of its legitimacy. The claim that reform should take the line of improvement in logic permits current and traditional problems to be taken for granted; but this, it seems to me, is precisely the point where examination should be very searching. It is one thing to accomplish a highly analytic formulation of a problem; it is another to state the conditions which generate the problem. A problem generated by mythical conditions may contain a perfectly logical sequence, but it is just as mythical as the conditions that generate it. The important thing to find out in the case of any suspected problem is what raises the question. For no friend of philosophy will admit, I suppose, that its questions should be like the aimless and unceasing queries of children. Is a question raised (1) by a perplexity in pure dialectic, or (2) by uncertainties in existential research, or (3) by the precarious prospects of a favorite symbol, or (4) by the mere inertia of a tradition? To mistake number one for number two, and to take literally numbers three and four, is surely to have problems that are either certainly or presumptively artificial.

In seeking to determine the status of a problem help ought to be derived from remembering the original function of intelligence. To

maintain that philosophy is a resource and a method of intelligence may seem to many extremely radical. However that may be, philosophy is often enough put forward as a method of intelligence, and thus viewed, its practise should be one "that looks to science for its view of the facts and to the happiness of men on earth for its ideal."⁶ A tradition which erects a screen of professional problems between the philosopher and the natural subject-matter of intelligence is one to be suspected, and if remnants of animism interfere with the study of human nature and its natural values, here is a real burden of the mind; I will cite one instance. The idea that "pragmatism" was an apology for theism has seriously interfered with the profitable discussion of the former, and in so far as it aimed at an empirical definition of "truth" it was damned as being solipsistic or meaningless because it seemed to clash with dialectical conceptions (totality, finality, ultimate truth), behind which, in their surreptitious existential reference, it would not be surprising to discover the idea of the universe. Pragmatism asked precisely, "What raises the question?" Now those who take problems dialectically have, of course, no interest in this point. It is, for them, merely a matter of clear definitions and then go ahead. Here was a point of view capable of bringing emancipation, and which, in spite of its reception, has already done so. But the fact that it was immediately laden with alien responsibilities is melancholy evidence.

If philosophy is anything really important, the situation is of more than merely academic interest just because important ideals have come to be represented by ambiguous conceptions. Discussion of the concepts is substituted for examination of the ideals, and as modern life becomes freer and more diversified, these conservative symbols become less and less adequate to the substance of experience. What can be more naïve than to substitute the dialectic of a symbol for the direct study of conditions, if what one is after is a knowledge of actual conditions? It is certainly to be regretted if professional philosophy has assumed a character that renders it unavailable as a method of intelligence. That does not mean that guiding philosophy has ceased to exist, but only that it has changed its name and fled into other departments of our universities, where chairs are not maintained for either saving the supernatural or threshing the husks of idealism.

⁶ "Three Philosophical Poets," by George Santayana, p. 5. Compare Bergson, "L'Evolution Créatrice," p. 1: "De là devrait résulter cette conséquence que notre intelligence, au sens étroit du mot, est destinée à assurer l'insertion parfaite de notre corps dans son milieu."

IV

But, I may be told, it is not facts but ideals that form the subject-matter of philosophy, and ideals handled in such a way as to produce inspiration. It is to get a "vision" of reality that we come to philosophy. Idealism, in its day at least, was a philosophy of vision, and the animistic tradition upon which the machinery of it rests has been, and doubtless to many still is, a source of inspiration. To such as these freedom from that signifies, very probably, only an impoverishment of the imagination. If men can not dream dreams, but can only toil, where is any emancipation worthy of the name?

The method of intelligence, it has been said, is "to look to science for its view of the facts and to the happiness of men on earth for its ideal." Surely the heightening of the value of things by the imagination is to be desired if only it does not hinder our looking to science for our view of the facts. And our concern with the facts is not a dedication of self to indifferent truth, but a concern with the causalities that alone are going to produce to-morrow and its vision. If I can be so responsive to the world as to see in all things the counsel of Zeus as I see the light upon the hills, why forbid that enrichment of life? To forbid it would be narrow and pedantic as long as poetry does not pass into superstition, *i. e.*, so long as the imagination does not mutilate common sense. It happens, however, to be the case that man's resources are the causalities inherent in things. When anything whatever is to be accomplished, causalities have to be invoked that make no concession to vision. That is only to say that they can be depended upon. To put into operation causalities that will generate specific results is the aim both of the man that plants a potato and the man that seeks to reform the state. Causality is bound to operate in any case, and intelligence will see to it that, so far as possible, the causalities that operate are the causalities of its choice. Only thus can there be a technique for generating a chosen future out of a given present. Science is, no doubt, oftentimes narrow and pedantic, but it is the best knowledge of facts that we have, and an adequate knowledge of facts would surely be science. The greatest poets have always esteemed science, and a reasonable *Naturforscher* ought to have a high regard for poetry. Is it not narrow and pedantic to maintain that loyalty to the facts is incompatible with vision? It may well be that metaphysicians have not yet learned to compose their vision in any terms except those of the animistic tradition, but it does not follow that nature is less able than theology to provide its content. But vision is an absorbing thing, and although it is the material of poetry, its composition can hardly be irrelevant to the business of intelligence. Our vision must either represent or

misrepresent the conditions which determine progress. The vision that misrepresents those conditions can not fail to be a burden from which intelligence must sooner or later seek its emancipation.

V

Treated objectively, the history of philosophy is not to be separated from the history of the supernatural. That explains why the passing of idealism is coincident with the passing of the supernatural. But that aspect of idealism which is passing is, I contend, not the central burden and meaning of it, but its metaphysical machinery, a product of supernaturalistic absolutism. Yet the great day of idealism is so recent, its vision has still such a compelling quality, its essential theme, the priority of human interests, is so important, and the animistic origin of its apparatus is so generally unsuspected, that problems resulting from the examination of this apparatus seem naturally real and significant. And yet if the passing of the supernatural is to be viewed as an emancipation of the intelligence from animism, a good many anti-idealists appear in an almost reactionary light. We don't seek to overthrow the metaphysics of the mass or of the doctrine of purgatory; why should we care so much about the metaphysics of the absolute or of the "external world"?

A story is told of a little girl who said, "That boy is my brother, but his mother is not my mother and his father is not my father." Now here, if you like, is a problem, but the solution of it is easy: the little girl lied. When a problem rests upon fictitious assumptions it can not be solved by pursuing the dialectic of those assumptions. To show that the problem is about a fictitious subject-matter is to solve it. For even if mythical assumptions do produce a logical conclusion, the conclusion will be as mythical as the premises, and can not be regarded as the kind of solution which a reasonable mind seriously seeks.

To sum up, the emancipation of which I speak is emancipation from a perfectly definite thing, animistic reminiscence, the persistence of which in various unsuspected forms has had a pervasive influence upon philosophy, resulting in a set of problems (epistemology) to which most thinkers are becoming increasingly indifferent but which no one has ever solved, for the good reason that they are pseudo-problems and therefore capable of solution only by another method. The study of origins has made it sufficiently clear how philosophy came to be flooded with such problems. Legitimate problems are such as nature would provide us with even if tradition had never heard of them; and the first thing to ask in examining a sus-

pected problem is, What raises the question? For if a question is to have a scientific or philosophical character and is to be, at the same time, a question about existence, it must be raised by a situation which is not merely an ambiguity in dialectic, nor concern for a treasured metaphor, nor the inertia of a tradition.

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MIND AS AN OBSERVABLE OBJECT¹

IT is seldom given to philosophers to enter into one another's enthusiasms, but they are sometimes allowed to share a disappointment. And could anything be more generally disappointing than the attitude of a certain important group of natural philosophers toward the study of minds? I refer to that curious bit of reasoning commonly known as the "analogy argument" which runs somehow thus: I am aware, and I alone am aware, that certain of my bodily acts are accompanied by mental states. When I observe similar acts in other bodies I infer that they too are accompanied by like states of mind. No experience can be brought to confirm this inference, but then nothing can transpire to refute it. Meanwhile, my feelings are spared a severe strain by risking it—the loneliness of not risking it is too tragic to be faced.

The objectionable points of this line of argument are just all the points that make it up. To begin with, it is so far from self-evident that each man's mental state is his own indisputable possession, that no one hesitates to confess at times that his neighbor has read him better than he has read himself, nor at other times to claim that he knows his neighbor's state of mind more truly than the neighbor himself knows it. No one finds fault with Thackeray for intimating that the old Major is a better judge of Pendennis's feeling for the Fotheringay than is Pendennis himself. To be sure, we are more likely to accept such situations when the state of mind read from the outside is complex and subtle; but there should be no difference in principle between the diagnosis of love and a test for color-blindness. It is quite as likely that under certain conditions I do not know what red is, as that, under other conditions, I do not know what love is. In a word, so long as we are social beings our judgments, even the simplest of them, have social meanings, and each knows himself through others.

¹ Paper read before the American Philosophical Association at Princeton, December 29, 1910.

Next, the analogy argument calls its procedure an inference. Now, everybody knows that an inference from a thousand cases is more valuable than one drawn from a hundred, that an anticipation based on a hundred observations is safer than one which has only ten to support it. But there are those who, knowing all this, would conclude that an inference from one instance has *some* value. If in my case mental states accompany my body's behavior, there is at least *some* ground for supposing that like acts of another's body are in like manner paralleled. This illusion, for it is one, springs, I think, from a failure to catch the meaning of inference. An inference from a single case, if it be really an inference from a single case, has exactly no value at all. No one would be tempted to attribute eight planets to every sun because our sun has eight such satellites. The reason that a single observation is sometimes correctly assumed to have weight is that the method of observing has been previously tested in a variety of cases. The shop-keeper measures his bit of fabric but once; he has, however, measured other fabrics by the same method numberless times, and has a fairly clear idea of the probable error of his result. But the principle holds absolutely of all results: no series of observations, no probable error, no ground for inference, no meaning as a datum.

Nor is our line of argument happier in its next point. The hypothesis of other minds is one that must be regarded as referring to the *jenseits* of things that make a difference to my experience. There is a definition of pragmatism that is to be found among the last sayings of the man whose absence this day leaves us lonely indeed; a definition that tempts me to think that I have always been, in all innocence, a pragmatist.

"The serious meaning of a concept," writes James, following Peirce, "lies in the concrete difference to some one which its being true will make. Strive to bring all debated conceptions to that 'pragmatic' test, and you will escape vain wrangling. . . . If it can make no practical difference whether a given statement be true or false, then the statement has no real meaning."

If the method defined in this passage be accepted, and I can not see how one can fail to accept it even if one prove unfaithful to it afterwards, then could anything more fully illustrate the meaning of the "meaningless" than that hypothesis of other minds in which the analogy argument culminates? Whatever may be said for the reasoning, is its conclusion at least right? Alas, I can not know. If right, my experience can not inform me; if wrong, my experience can not disillusion me. It makes no practical difference to me whether I am right or wrong. Pragmatic conclusion: I can not have made a meaningful hypothesis.

But here I hesitate. The same writer whose definition of method I was eager to accept as pointing the lack of meaning in the hypothesis under consideration, is capable of interpreting his own words, "that which makes a practical difference," in a way one might be excused for having overlooked as a possibility. He had once said—quite as we should have expected him to say—that "'God' and 'matter' might be regarded as synonymous terms so long as no differing future consequences were deducible from the two conceptions." Should we not equally have expected him to say that a soulful neighbor and a soulless one were synonymous terms so long as the two neighbors treated us in the same way? Yet not only does he refuse to go so far, but, coming face to face with the problem, he hastily retraces steps already ventured. "I had no sooner given the address (containing the statement respecting 'God' and 'matter') than I perceived a flaw in that part of it. The flaw was evident when, as a case analogous to that of a godless universe, I thought of what I called an 'automatic sweetheart,' meaning a soulless body, which should be absolutely indistinguishable from a spiritually animated maiden, laughing, talking, blushing, nursing us, and performing all feminine offices as tactfully and as sweetly as if a soul were in her. Would one regard her as a full equivalent? Certainly not, and why? Because, framed as we are, our egoism craves above all things inward sympathy and recognition, love and admiration. The outward treatment is valued mainly as an expression, as a manifestation of the accompanying consciousness believed in. Pragmatically, then, belief in an automatic sweetheart would not *work*, and in point of fact no one treats it as a serious hypothesis. The godless universe would be exactly similar. Even if matter could do every outward thing that God does, the idea of it would not *work* as satisfactorily, because the chief call for a God on modern men's part is for a being who will inwardly recognize them and judge them sympathetically. Matter disappoints this craving of our ego; so God remains for most men the truer hypothesis, and indeed remains so for definite pragmatic reasons."

I conceive that no criticism could make heavier the burden of disappointment which these words of their own weight carry with them into the soul of any man who, having found no better reason for believing in God and his fellows than the analogy argument furnishes, now finds no better motive for believing than this kind of pragmatism holds forth. Instead of criticizing, let me use the picture to contrast with it another which, in spite of certain elements that may at first sight offend previous ideas on the subject of soul, must at least satisfy the reason of an empiricist.

No, I suppose no one would regard a soulless sweetheart as a full equivalent for a soulful one, as these words soulless and soulful are ordinarily used. But just there is the point: how are they ordinarily used? If I imagine myself come to believe that my mistress, with all her loveliness, is really without soul, I can not think what I should mean by this, if it be not that I fear her future conduct will not bear out my expectations regarding her. Some trait or gesture, a mere tightening of the lips, hardening of the eye, stifling of a yawn, one of those things we say are rather felt than seen, would have raised in my mind the suspicion that she might not, to my fuller experience of her, remain indistinguishable from a spiritually-minded maiden. Aye, now that I come to think of it, has she ever been, except to my blinded eyes, indistinguishable from one who had that "inward sympathy and recognition, love and admiration, that above all things my egoism craves"?

Isn't this what we mean by the practical issue involved in the disjunction—soul or no soul? Of course they are not equivalent, these two, and they are not so just because a soul is not the kind of thing the analogy argument takes it to be. It would never occur to me to try to hold this suspicioned lady's soul by tying an eject around her neck. What she is for me and what she is *an sich* constitutes just such a difference, now that it is a question of a soul, as it would were any other fact of nature up for discussion. The poorer and the fuller experience of the thing, these and these alone define such a difference. I am afraid to know my sweetheart better lest I come upon that trait of her behavior which would only too surely distinguish her from the soul-inspired maiden I had taken her to be. If, *per impossibile*, I could be assured that no such trait of behavior would ever reveal itself to the fullest experience, and if the hypothesis were still thrust upon me that she might nevertheless be without soul, my feelings would react as they might be expected to do were one to assure me that a given figure must prove to all possible observation three-sided and plain enough, yet might *an sich* be without triangularity.

If my analysis of this concrete situation has not been too badly received, I shall have courage to utter the full thought that lies behind the criticisms and suggestions that have been submitted. It is this: Consciousness is not something inferred from behavior, it is behavior. Or, more accurately, our belief in consciousness is an expectation of probable behavior based on an observation of actual behavior, a belief to be confirmed or refuted by more observation, as any other belief in a fact is to be tried out.

You will ask me: What aspect of the behavior of certain objects

leads us to call them conscious? I answer, I do not know, and expect never surely to know. Had I been asked: What aspect of the behavior of certain objects leads us to call them alive? I must have returned the same answer. The deep, blind instincts of the race, slowly working themselves out into the classifications we now so readily accept and so facilely apply, these instincts are not easily to be enticed out into the light of day. But though I don't know what life means, nor what consciousness means, I feel that I know how we may go to work to find out these things, if once we see that neither stands for an object forever veiled and hidden in the land beyond experience. Instead, then, of venturing a word where a long and patient analysis would alone suffice, I may confine myself to the weighing of certain objections that would attack the very method here suggested for finding out what consciousness means.

The whole situation out of which the analogy argument springs is that seized upon by English sensualism. Here the essential idea is that I have certain immediate data, recognizable and namable each by itself. Out of these simple ideas (whether of sensation alone or of sensation and reflection) I build my world of objects, including my own body and the bodies of other humans. If I am to suppose these other beings have minds at all, I must suppose that their minds work in the same way to build up a world in which my body is an object. But if they do, then they start from data as independent of any reference to mine as I assume mine to have been from any allusion to theirs.

To one who can not rid himself of this way of philosophizing, it is impossible that any analysis of behavior that I might undertake should prove satisfying. The whole idea of my thesis would be simply an absurdity. For—and if I have not emphasized the point sufficiently I now take the opportunity to do so—it is essential to my thesis that I regard my own mind as behavior, quite as frankly as I take my fellow's mind to be nothing else. It is of course a *type* of behavior that is in question, and it is my observation that I act like or unlike others in certain situations which makes me class my experience as of such and such a kind. If the part of my behavior that is dependent upon my eyes being open and directed toward an object is identical when that object is blood and when it is grass, while that of other men similarly placed is different toward the two, I judge that I have only one color sensation where they have two. In all such cases my notion of my mental state, as also the fact that I have any notion on the subject at all, is dependent upon my observation of behavior. It is impossible that any one should come even a first step toward agreeing with me if he is wedded to the

theory of experience that starts with a datum as a mason starts with a brick or a chemist starts with an atom.

I have on a former occasion before this association accepted the thesis that there is no such datum, and as even at that time there seemed to me nothing novel in such acceptance, but merely an insistence that we should not keep on forgetting what we had some time accepted as true, I need not argue the point here. As nearly as so complex a matter can be put in a few words, the thought is this: The beginning of our epistemological building is not a datum which might be known by itself, not, *e. g.*, the first sensation of a babe *in utero* or of a Condillac statue, but just any point at which it occurs to us to ask ourselves, What is it you know? and, How do you know it? From this point—it may as well be for a Newton the evening of the day he has given to the world his law of gravitation—from this point stretch out two wearily endless ways. The one leads toward, but never arrives at, the real object; the other leads toward, but never culminates in, the bare datum. We shall never have the one before the other, nor yet come nearer to the one save as we come nearer to the other. Sensualism is the philosophy of the impatient thinker who will arrive at all costs—the analogy argument is one of the costs.

But when I have made the sensualistic philosophy the soil from which the analogy argument favorably springs, I have not yet dug down to the roots. The whole attitude toward souls and the relation of souls to bodies which makes the outcome of “analogy” seem meaningful, even if regrettably insecure, is the result of much older habits of thought than those that guide the highly reflective procedure of a Locke or of a Hume. These primitive habits are intimately mixed with ethical motives, yet I think their deepest significance is to be caught by viewing them as early attempts at scientific method.

From this point of view, one must recognize the satisfaction that the most unreflective mind has in treating any complex thing as an additive result, a sum of simpler things. This instinct for adding might be illustrated almost indefinitely; but one or two cases will serve to show how addition has been used and abused.

We are barely through those long chapters in the history of science in which the theory of a hot body composed that object of a body plus heat. This heat was first conceived as itself a kind of body—a congeries of small, round atoms; then, since heat did not increase the mass to which it was added, it became the vaguer stuff called caloric. Nevertheless, however ghostly this caloric had become, it still went in and out of bodies like a stuff, fell under the

same principle of individuation that bodies fall under, was in short a sort of body, though a mysterious sort of body. We know with what travail this strong, primitive instinct to add was overcome, and men had the courage to say, "Heat is not something inferred from the heated behavior of a body, it is that behavior. A hot body differs from a cold body only in the way its parts move." The mystery had vanished. A quantity of heat had no longer an individuality of its own, but if it could be said to travel, it did so as a wave travels, and the theory of its nature became clear.

Again, we see this same instinct to add in a theory of life not yet past, perhaps, but certainly passing. As a hot body is a body plus heat, so a living body is a carcass plus life. The history of this conception is strikingly like that of the previous one. At first the thing added to body to make it alive was another body—the psyche—differing, may be, in certain of its qualities, but still falling under the same principles of individuation, having a history of its own when disembodied. Now, this psyche is reduced where it survives at all to that vague principle called "the vital," of which all that can be said is that it is a mystery. Few thinkers cling to this survival; for most of us a living body is a mechanism that behaves in a certain way, one that is well calculated to attain certain ends. Life is no longer a thing to be inferred from behavior; it is behavior, and while it is an aspect of a body's behavior from which other aspects may be distinguished, we no longer think of these aspects as separable. Disembodied life has been placed among the myths.

And now, should we not expect the same instinct to add to have played a part in our theory of consciousness? Aristotle, close as was his doctrine of forms to the treatment of life advocated in this paper, yet fell into the old habit when he composed a rational animal of an animal plus a rational soul "come from without." Descartes, close as he was to the theory that a living body is a mechanism behaving in a certain purposeful way, had yet to compose a human being of such a living body and a soul perched in the pineal gland. Are we so far from this when we confection a real sweetheart of an automatic one and an eject? To be sure the eject is not located and the kind of individuality it may have is not specified; but therewith we have taken from the additive soul the last thinkable trait it possessed. It has now the complete mystery of the meaningless.

Have we not come to the point of realizing the meaninglessness of the mystery?

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REVIEWS AND ABSTRACTS OF LITERATURE

Thought and Things of Genetic Logic. Vol. II., Experimental Logic.

JAMES MARK BALDWIN. London: Swann Sonnenschein & Co.; New York: The Macmillan Company. 1908. Pp. xv + 436. There are three appendices and a fair index to the first two volumes.

This is the second of three volumes, appearing in French, German, and English, on the subject of genetic logic, a subject never before so comprehensively treated by an American author. It follows throughout the genetic method of tracing out the successive stages in the embodiment of belief. It is logic from the point of view of the knower rather than that of the analyst who only looks on from the outside. As conceived by Baldwin the process of knowing has for the knower characters which it does not have for the outsider. For the knower it involves continual reference to similar processes dealing with the same material and going on either actually or possibly in other minds. For the knower it also involves reference to the "external control" of things. This dualism of inner, personal, or social, and outer or external controls is the characteristic presupposition of the book, as it was also of volume one, but we are warned against supposing that Baldwin asserts these two controls as realities. They exist only "for consciousness," for the knower, and, however essential they seem to the knower and the knowledge process, I suppose that in the author's third volume on "Real Logic" the dualism will be interpreted as phenomenal. "The dualism of control is all the while 'for consciousness,' not for our final theory of reality" (p. 5, note). Italics are used in the text "because of certain misconceptions of the theory of control worked out in volume one."

Nevertheless, certain things in this book are calculated to give rise to misunderstanding on this point. Take, for example, the statement on page 25: "Moreover, experience, of which each judged content is part, is a whole of inner meaning, a life of ideas, and this meaning is controlled by the subject-self functioning for the realization of its interests and purposes. It would seem then to be altogether true that judgment is self-assertion." "The self is the *subject-agent* of judgment, but not commonly the *subject-matter*, the psychic subject, not the logical subject" (p. 28). "The subject of control claims and owns the entire organization of ideas as its experience—as making up its very self, the 'me' of the whole of experience. It thus becomes at once available for ejection. All other selves are subjects also, and all subjects are subjects of experience; the whole of experience is yours as well as mine unless there be characters of personal or private meaning which I have right and reason to reserve from the body of my ejection" (p. 65). The doctrine seems to run through the entire book, but we say "seems" because Baldwin, in the passages referred to above and in a personal letter, denies that he believes the dualism of controls to be real or to have an existence of any sort except "for consciousness." This complicates the whole dis-

tion between subject and object, between consciousness and its world. On page 289 two different kinds of persistence are spoken of, outer and inner. Outer or external persistence is "sameness-of-recurrence" of an object which also has the meaning "sameness-when-absent." External sameness is identified by recurrence and the testimony of others, or "secondary conversion." "In the matter of inner identity, however, the procedure is not the same; we neither wait for recurrence, nor do we ask our neighbors. We find in the immediately persisting and continuous mental life the experience that enables us to call the self identical." Is this distinction between outer and inner identity only phenomenal? Nothing in the language of the immediate text suggests that it is. On page 328 occurs the statement, "This is to say that reflection in fact can not dispense with one of its criteria, the dualism of self and the objects of thought." On page 379, "Facts enter as control over ideas; but ideas also mediate relative control of the self over facts." Does this mean that all this seems to the knower to be the case, but that really it is not the case?

One other source of difficulty to the present reader in connection with this whole doctrine of control is the fact that Baldwin attacks the doctrines of control held by other writers because they are not dualistic. Indeed, in stating Dewey's conception of control, "The 'control' of the 'Studies in Logical Theory' and other works of the Chicago School so-called," Baldwin practically identifies it with his own doctrine of "inner control." "It is control of a personal sort" (p. 349). It is not "knowledge through control" (Baldwin's view) but "control through knowledge"; "but here it may be easily seen that the 'control' to the latter theory is the 'inner' or personal control of the former—one only of the sorts of control found actual by the present writer" (p. 349). Now for the writers of "the Chicago School so-called" control is neither inner, nor outer, nor both. Their doctrine simply can not be stated in terms of Baldwin's conception of dual control, especially when this dualism of controls exists all the while only "for consciousness, not for our final theory of reality." But when Baldwin compares his own conception with that of Dewey, without mentioning that his own dualism of controls exists only for the knowing processes and not really, he ought not to be surprised if some of us are misled. Notwithstanding his expressed "hope" (p. 349, note) that "he may not be found to misrepresent these authors," the present reviewer finds that his account of them positively refuses to be characterized as anything but a misrepresentation. Moreover, when Baldwin goes on to say (p. 360, note), "See the exposition of Miss Adams's 'The *Æsthetic Experience*.' I suppose Miss Adams's is an accredited exposition—and I should say a very clear and able one—of the position of Professor Dewey and his colleagues," one wonders at the term "accredited exposition of the position of Professor Dewey and his colleagues," and wonders whether "these authors" and Baldwin are addressing themselves to the same problem at all. Does Baldwin mean that his doctrine of dual control is not true? Or does he mean that there are two kinds of truth, namely, relative or phenomenal truth for the con-

sciousness of the knower, and a real truth to which this dualism of controls is foreign? Perhaps the latter, but in that case how can his own dual control be compared at all with the doctrine of control of "the Chicago School"?

In explaining the subtitle of this volume Baldwin writes: "The logical operations as such, considered as the essential method of advance or progress in the mode of thought, proceed by experimentation, or, to use the more special term, employed in the first volume of this work (Chap. VIII., §§ 6 ff.), by a process of schematism. This consists essentially in the *experimental* erection of an object already made-up in consciousness, and its treatment as having a meaning or value which *it has not yet been found to have* with the expectation and intent that in the result it may be found to have it" (p. 4). But while schematism and experimentation are the essential method of advance in knowledge, judgment does not appear until they have been passed. The stages in the advance are schematism, direct experimentation, generalization, and judgment. Like Mill, Baldwin confines the logical to the sphere of established implications. Logical judgment is always the embodiment of belief. The general, the concrete, and the logical are all retrospective, while schematism is always prospective. Contents are retrospective, intent and control are always prospective. And yet, "no predicated or judged knowledge is ever free from that instrumental and problematical reference which one or other of these tests would further fulfill. Either that which is reasonable is still to be elucidated for some mode of acceptance, or that which is generally accepted is still to be proposed for individual confirmation as reasonable" (p. 164). All logical meanings have two aspects, the one accommodative, experimental, prospective, and the other habitual, relational, retrospective (p. 165).

There are two sorts of schematism, namely, the recognitive or scientific and the selective or appreciative. In so far as they become subject-matter of judgment, selective meanings are recognitive, appreciations are truths (p. 8 ff.). Both are purposive, but scientific schematism alone must agree with facts and satisfy the theoretic or knowing interest. Four kinds of interest are distinguished, namely, the "practical," the "pragmatic" (which is the practical interest considered from the objective or psychological point of view), the "theoretic," and the "pragmatelic" (which is interest in the system of knowledge as satisfying, fulfilling, consequential, etc.). "'Practical' interest is that which motives the mass of contents of cognition and action fused together in their early flow and development" (p. 10). These four are the practical and theoretic interests viewed now as motives to action (using the words broadly) and now as psychological phenomena possessing certain values. The former view is recognitive, the latter selective. The two types of schematism are named, in the prelogical mode, presumption and lower assumption, and in the logical mode, presupposition and higher assumption. A child presumes the existence of a toy for which it cries: it assumes a control when it tries to "feed" its doll. We presuppose the law of conservation in physics: we assume a control in the illusion of the theater. This is

an adaptation of Meinong's distinction between *Annahme* and *Voraussetzung*, an adaptation to the "inner" and "outer" controls and the distinction between prelogical and logical modes which are presupposed throughout this volume.

Section three of chapter two classifies modes of control as a basis for classifying modes of belief. (1) Direct internal and external control issuing in assertorial forms of judgment, such as, "John is a good fellow";¹ (2) semblant and other selective controls issuing in appreciative judgments, "Let us pretend John is a good fellow," "Hurrah for John who is a good fellow"; (3) alternative control issuing in disjunctive judgments, "Either he is a good fellow or my informant is mistaken"; (4) experimental or schematic control issuing in the hypothesis, "Suppose he is a good fellow," and the interrogative, "Is he a good fellow?" (5) the attitude toward accidental or *anomic* constructions expressed in such statements as "I dreamed he was a good fellow," "What a conceit, fancy him a good fellow!" Every shade of attitude toward earlier meanings is comprehended in this scheme, and hence the spheres of reality, possibility, and unreality, the spheres of modality (p. 38). Appreciative meanings are always immediate: they are not under various controls, but are added to each of them (p. 43). Possibility or partial belief is expressed in experimental, disjunctive, and conditional statements, and disjunctive meanings are either exclusive, indefinite, or inclusive. Disjunction expresses belief in a whole of uncertain content, while the conditional judgment expresses belief in a definite content of an uncertain whole. The former is genetically the earlier. This chapter follows Venn to some extent.

Chapter three investigates "common acceptance and acknowledgment," or what we might call the social character of knowledge. All judgment as such is syndoxic, *i. e.*, its meanings are not only held in common, but held as common (p. 60). Mind content is always syndoxic because ejective (p. 64). In so far as it is singular, a meaning represents a variation toward the fulfillment of a special personal interest or the satisfaction of a caprice. Singularity is either "essential," imposed by external control, or "imported" and due to selective interest or internal and private control. In the former case it is in community one with the universal, the difference between them being the difference between a group of different objects with the same meaning and a group of recurrences of the same object with the same meaning. In the latter case it is not logical. Like the schematic and the self-identical subject, it is alogical or superlogical. Section three of chapter three distinguishes between meanings which are actually and aggregately held in common (the earlier form of syndoxity) and those which are syndoxic only in the sense of being fit or appropriate for actual holding in common (synomic syndoxity).

On the one hand, "the persistence of a world of minds becomes, then, as soon as I reflect and judge, a *presupposition* of my judgment" (p. 93). "A judgment which constitutes a meaning as universal for a process of

¹The illustrations are mine.

thought, also universalizes the process of thought by which that meaning is constituted" (p. 63). On the other hand, the private individual and the private judgment alike are treated as a sort of precipitate or crystallization of a universal mental medium. To this manifold of minds face to face with a common external world is due the dual character of all logical meanings as both experimental and relational, both elucidative and proposive, both retrospective and prospective. "The solution is to be found only in an experience that is not indeed *a-logical* but *super-logical* and immediate in its mode—to anticipate our discussions of 'Real Logic'" (p. 165, note).

In chapter four the problematical is defined to comprehend both the disjunctive and the contingent. The former has a definite control, but expresses as yet indefinite internal relations. In the contingent judgment the internal relations of the content are very definite while the control is undetermined. The former is a judgment with presupposition: the latter, a judgment with postulate. Presupposition is an attitude of acceptance: postulation, one of assumption.

There follows a discussion of quantitative distinctions. These express judgments of possibility, probability, and improbability, and cover a wide range of degrees, "one," "a few," "some," "half," "many," "most," and "all." The unquantified universal, such as, "Virtue is praiseworthy," is intensive in meaning while quantified universals are extensive. The same is true of quantified and unquantified singulars (p. 122 f.).

Chapter five deals with the contingent. Presupposition is the acknowledgment of the contingent as holding in some implied sphere of control: postulation, the contingent acknowledgment of an implication which may hold in some sphere or other. All presupposition is implication, part of the intent, of the subject-matter, of the judgment:² it may itself become subject-matter in existential judgments (p. 134). In postulation the mode of existence is undetermined and the whole meaning is schematic.

Chapter six has to do with the development of logical meaning through predication and intercourse. Language embodies social habit: social accommodation is effected through speech and intercourse. Elucidation and proposal are the two motives of logical intercourse, the former being retrospective and the latter prospective. There are no judgments which are purely elucidative to both speaker and hearer.

Chapter seven has to do with the development of logical meaning by *terms*. Section four deals with abstraction, pointing out that selective meaning is its basis and repeating that selective meaning always embodies individual and personal disposition and interest. Not that certain meanings are selected for abstraction, but rather that logical meanings are abstracted by a process of selection (p. 186). In an interesting section Baldwin points out that singularization is not a process of individuation in extension, that the singular has properly no extension. The correlation of the concrete and the abstract is only another illustration

² Why then is not control an implication, part of the content or subject-matter of judgment?

of the dual character of all logical meanings, a character of which the recognitive and the selective, the retrospective and the prospective, elucidation and proposal, implication and experimentation, content and control, the habitual and the accommodative, presupposition and higher assumption, the analytic and the synthetic, the static and the processional, etc., are other illustrations. It is the distinction which, as a distinction in functions, has played so large a part in the logic of the Chicago School.

In chapter eight proposition is defined as "that mode of predication in which relation is individuated as a meaning" (p. 211), but the relation is not expressed in the copula, it is embodied in the predicate (p. 262). The characters of propositions are grouped under two main heads as content-wise and control-wise. Each comprehends three characters. From the point of view of control or belief, these are modality (telling where or in what sphere the meaning is valid), quantity (telling how much), and community (telling by whom): from the standpoint of the content or relations expressed, quality (telling what), relational character (telling why), and community (telling for whom) (pp. 212-15). This chapter is chiefly devoted to the subject of quality, and of the two, to negation. Limitation is here recognized as a quality distinct from both affirmation and negation. The limitation of a cognitive field motives the distinction of quality as affirmative and negative. But limitation may be selective, as well as recognitive, and in that case we have "the intentional exclusion of whatever else there is except what is then and there selected." This is privative or imperative negation. Both types of exclusion are applied to singulars. The singular may be exclusive for either reason. The only "pure exclusion" is the denial of one singular of another, as, "John is not James." The imperative privative, such as "Let *A* be *B* and nothing else," is the case of the will-to-believe, and so far as it is intended to advance the meaning of *A* it is a pure proposal. But really it is not logical, because it is not an experimental proposal. It is really a will-to-deny that *A* is anything but *B*, without regard to evidence, and hence it is dogmatic and obstructive.

Chapter nine, on the import and character of the proposition, identifies synthetic with proposive judgments, and analytic with elucidative. All judgments have both characters. No one can express what he has not conceived and the proposal motives the redistribution of elements whose issue is a new stage of conception (pp. 245-46). Negation always denies synthesis or proposal and is analytic (p. 249). All judgments equally, whether affirmative or negative, intend existence (p. 256). All quantified affirmative propositions presuppose existence. To deny a meaning is to reject it from a control, not to reject the control. Disbelief is a form of belief: the opposite of belief is doubt.

This discussion concludes the second part of the book entitled "Genetic Theory of Thought and Knowledge: How Thinking Goes On." It is the largest and on all accounts the best part of the work. It makes the book worth while. Indeed, the discussion of the negative alone is reason enough why it should be carefully studied. Part one is a single intro-

ductory chapter. Part three is devoted to the subject of implication as a necessary relation of the elements of a whole of logical meaning to each other. Two great characters of propositions are fundamental: one dynamic, synthetic, developmental, the character of wholes as such; the other static, analytic, implicative, the character of relations established within wholes (p. 272). The former receives the general name of "modality," and the latter, "relation." These are of course the same as the reconstructive and habitual aspects of logical meaning pointed out by the Chicago School of logicians. The former character, called control in earlier chapters of the book, is the main theme of eight of the first nine chapters. Hence, in part three, the discussion takes up the other theme, devoting chapters ten, eleven and twelve to it.

"Every implication is a subject-matter identical with itself, different from or exclusive of any other, and, taken together with its contradictory, exhaustive of the sphere of control in which they are both found" (p. 283). There is no *a priori* law of identity above and beyond the individuation of an object of thought as such. Its being identical and its being an object of thought are one and the same thing, namely, its being this object and not any other. Implication grows by judgments of identity.

In chapter eleven induction is treated. It is the transition from pre-logical sameness in difference to logical identity and difference, and it issues in logical classification, ordination and definition. It is the experimental establishing of judgments of identity. "When may I be sure that among the varieties of natural happenings I have found a recurring, persistent, and invariable grouping of facts?" To answer this question "a meaning already achieved is used experimentally to secure by further experience the definition and limitation of its comprehension" (p. 303 f.). But in formulating this method more exactly, Baldwin falls back on Mill's canons of induction and apparently accepts them without modification, although he supplements them as we shall see. Now Mill's methods are for the discovery of invariable sequences, to the neglect of coexistences, an oversight that has persisted in inductive logic even in this discussion of Baldwin. Moreover, they are methods of elimination and presuppose a system of nature made up of a manifold of kinds and causal agents which are self-identical and already known. They assume that the data of induction are the same as the content of the judgment of identity which results from them. Mill's canons were deduced from this *a priori* conception of nature or the objects under investigation. They are not derived by generalization from actual scientific procedure. Consequently they are largely deductive methods, presupposing as they do that we already know the nature of the elements of the phenomena under investigation. It will be found upon investigation that the method of induction outlined by Baldwin (pp. 304-07) is also essentially deductive. I know by agreement that "man is vocal whenever I find him"; and by difference that "the not-vocal wherever I find it is not man." "I could not then say," writes Baldwin, "that men who are non-vocal might not still be come upon. But if I now have an experience that correlates non-speech, as in the anthropoids, with certain anatomical characters which also ex-

clude some of the essential marks of man, I can then say 'the non-vocal are not-man' reaching the exhaustive limitative judgment 'man is not non-vocal' or 'man is vocal.' . . . We can now say 'man must be articulate, for to take speech from him places him in another anatomical class than that of man' " (p. 306). Let us suppose that the crucial anatomical characteristic is the absence of a certain palate. How do I come by the information that the absence of a palate is universally characteristic of not-men, and that its presence is a universal characteristic of man, and that it is universally correlated with speech? Is it not evident, if Baldwin's method is to be followed, that before we can establish by induction any one of these judgments we must establish some other *a priori* judgment of identity upon which to base them, and so on *ad infinitum*? Is not the judgment, "man is not non-vocal," according to Baldwin's method, an obvious deduction? If we have *a priori* grounds for correlating non-speech with certain anatomical characters which exclude man from the class of non-speaking animals, we may then *deduce* analytically the conclusion that man is not non-speaking; but in that case the inductive methods of agreement and difference are entirely superfluous; while, in the absence of any such *a priori* correlation, induction, as outlined by Baldwin, is a futile regress of inductions to back up inductions.

The discussion of deduction fails to bring out the close and vital relation of the process to induction in scientific procedure. Indeed the book makes no serious attempt to treat either of these great topics. They are classed under the head of implication and left to the treatises on formal logic. The present reviewer feels that Baldwin has handled a great theme seriously up to the point where its climax should begin, and there the discussion dwindles into sketchy commonplaces.

Part four, including chapters thirteen, fourteen, and fifteen, is devoted to the dualisms and limitations of thought. For the most part it is a discussion of what Baldwin calls pragmatism. It identifies pragmatism with his own doctrine of "inner control" and treats it as though the pragmatists held that that is the only control—an altogether disappointing procedure.

This paper is already too long, but we can not conclude without a brief word as to the most characteristic feature of this book, the doctrine of control. To me it is the name of a problem which Baldwin has not gone to the bottom of. Whence are these "spheres of control" so often appealed to? What is their justification? The book contains no thorough-going answer to these questions. Their relations to the real are reserved for treatment in the third volume. But is it possible to treat experimental logic thoroughly without discussing them? They are the very universes of discourse which make exhaustive judgments of limitation possible and we have seen that in the discussion of induction they are simply assumed. Nevertheless, it repays study, and we are sorry to leave the subject with this note of regret.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. November, 1910. *Dépersonnalisation et émotion* (pp. 441-460): L. DUGAS ET F. MOUTIER. — Depersonalization is a dissolution of attention springing from a general weakening of the emotions. Apathy is its essential feature and cause. *Psychologie générale et psychologie musicale* (pp. 461-482): L. DAURIAC. — There is a knowledge of the particular in which the senses merely collaborate. How they work with intelligence comes out clearly in certain results of the psychology of music. *Les travaux de l'école de psychologie russe: étude objective de la pensée* (pp. 483-507): N. KOSTYLEFF. — These studies concern themselves primarily with the phenomena of ideation, and successfully develop the thesis of Sétchenoff that thought is the "reflexes of the brain." *Revue critique. L'oubli, d'après le récent livre de Renda*: F. PAULHAN. *Analyses et comptes rendus. Varisco, I problemi massimi*: P. FONTANA. Schultz, *Die Maschinentheorie des Lebens*: DR. S. JANKELEVITCH. J. Duclaux, *La chimie de la matière vivante*: F. LE DANTEC. Ludemann, *Das Erkennen und die Werturteile*: J. SEGOND. J. Charmont, *La renaissance du droit naturel*: L. DUGAS. J. Dewey and J. H. Tufts, *Ethics*: J. SEGOND. Dr. E. Dürr, *Grundzüge der Ethik*: J. SEGOND. Sarlo e G. Calo, *Principi di scienza etica*: J. SEGOND. B. Alimena, *Principi di diritto penale*: G. RICHARD. L. Paschal, *Esthétique nouvelle fondée sur la psychologie du génie*: L. ARRÉAT. A. Prandtl, *Die Einfühlung*: C. LALO. *Revue de périodiques étrangers*.

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NOTES AND NEWS

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

Sufferings, even the sufferings of hell, may be looked at from different angles. The readers of this JOURNAL have just had the benefit of Professor Santayana's and Professor Fletcher's reflections on Dante's astonishing view. Possibly a few words of Nietzsche's may not be without interest. His attitude to Dante is generally a critical, not to say hostile, one; but he says (*Werke, Taschenausgabe*, Vol. X., pp. 205-6, § 1030):

"A full and mighty soul will not only get on with painful, even terrible losses, deprivations, forced dispossessions, contempts; it comes out of such hells with greater fullness and might—and, what is most essential, with a new growth in love and its blessedness [mit einim neuen Wachstum in der Seligkeit der Liebe]. I believe that he who has divined something of the bottommost conditions of any growth in love will understand Dante, when he wrote over the portals of his Inferno: 'Also me did eternal love create.'"

The difference, it must be confessed, is that one can not get out of Dante's hell, while one may—and the strong man does—out of Nietzsche's.

WILLIAM M. SALTER.

CAMBRIDGE, MASSACHUSETTS,

March 6, 1911.

THE editors of the *Psychological Review* for March make the following announcement:

The officers of the International Congress for Psychology, 1913, consisting of the two vice-presidents, Professors E. B. Titchener and J. McKeen Cattell, and the secretary, Professor John B. Watson, voted some time ago to ask the past presidents of the American Psychological Association to serve as vice-presidents of the Congress. At a recent meeting in New York of the enlarged body of officers, called by Professor Cattell, details and plans for the organization of the Congress were discussed. It was decided to hold the Congress at Easter, 1913. The executive committee which now jointly represents the interests both of the Congress and of the American Psychological Association consists of the following members: James R. Angell, W. V. D. Bingham, J. McKeen Cattell, Hugo Münsterberg, E. C. Sanford, E. B. Titchener, John B. Watson.

A NEW journal for philosophical essays and criticism has just been founded by Giovanni Papini and Giovanni Amendola, entitled *L'Anima*. The contents of the first number are from the two editors. The address of the journal is Florence, Via dei Bardi, 6.

THE Huxley lecture at Birmingham University is to be delivered by Professor Henri Bergson, lecturer on philosophy at the University of Paris.

PROFESSOR J. G. FRAZER has been appointed Gifford lecturer in the University of St. Andrews, 1911-12 and 1912-13.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

CONSCIOUSNESS IN PSYCHOLOGY AND PHILOSOPHY¹

THE great problem of ancient philosophy was the relation of the universal to the particular. The Greeks and Romans had no problem of consciousness, because both the universal and the particular were for them essential aspects of existence. They had conceptions very much like our notions of consciousness, but they had no term which is an exact equivalent to ours. The words *συναίσθάνομαι*, *συναίσθησις*, and *συνειδησις* probably came nearer to meaning the same as our word consciousness than any other words in the Greek language. The only Latin word which approaches consciousness in meaning is *conscientia*, which usually means about the same as our word conscience, although it is occasionally used to mean self-knowledge in general. Later came Christianity with its emphasis on the soul and heart, with their motives, sins, and destiny.

Descartes not only distinguished a substance whose essence is thinking from a substance whose essence is extension, and conceived minds as individual things related to each other and to non-mental things; he also for the first time in modern philosophy emphasized the idea that consciousness is essentially the perception of what goes on in one's own mind. This notion that consciousness is essentially self-consciousness is one of the two commonest current meanings of the term, the other being the various processes that enter into and constitute the mental life. Descartes's controversy with Gassendi developed the doctrine of the subjectivity of the sensory attributes of things, and the distinction between primary and secondary attributes was introduced into philosophy.

The ancients were aware of the importance of the fact that many minds may know the same object; they frequently refer to it; and when in modern times the word con-scious-ness was invented, this was its earliest signification—the knowing of things together by many minds. Professor Baldwin's name for the same thing in his recent book is "syndoxic meaning"—the word translated into Greek.

¹Read before the joint session of the American Psychological Association and the Western Philosophical Association, Minneapolis, December 29, 1910.

This idea was generalized into the knowledge of knowledge, and consciousness came to be the individual's perception of what passes in his own mind. This is the primary meaning of the term in Locke's "Essay," 1690. In 1715 Samuel Clarke wrote, "Consciousness . . . signifies . . . the reflex act by which I know that I think and that my thoughts and acts are my own and not another's." Late in the nineteenth century, Sir William Hamilton wrote that consciousness is purely intuitive, "the recognition by the thinking subject of its own acts and affections."² In his "Discussions of Philosophy and Literature" (the New York edition), page 570, we read, "Whatever comes into consciousness is thought by us either as belonging to the mental self exclusively (subjectivo-subjective), or as belonging to the not-self exclusively (objectivo-objective), or as belonging partly to both (subjectivo-objective)." Certain curious riddles follow from this doctrine, but we shall not stop to dwell on them here. Hamilton took consciousness about as seriously as anybody could.

The usage of the early English psychologists shows, however, another tendency. Locke all but identifies consciousness with the thoughts and emotions of which one is conscious. Thus, "It is altogether as intelligible to say a body is extended without parts, as that anything thinks without being conscious of it or perceiving that it does so." One might as well say that a man is always hungry but does not always feel it, as that he thinks but does not always perceive it.³ "Thinking consists in being conscious that one thinks." Thus all states of consciousness are essentially states of self-consciousness.

In its empirical aspect, mind is the same thing as consciousness—it is the place where mental processes go on. Of course mind has another aspect. It is that phase of reality which is more and other than mere matter in motion (G. F. S. and J. M. B.).⁴ It differs from the thinking substance of Descartes in that its content is processes and functions, and also in that it is organically related to the habits and the general physiology of the individual. But, as in the "First Alcibiades" of Plato, the "Nicomachean Ethics," Cicero's "Somnium Scipionis" (§ 8), and Descartes's second meditation, the mind is the man, properly speaking. It is an individual thing sustaining relations to other things and comprehending a various content. Baldwin and Stout do not speak of it as *substans*, but if the word still retained its original meaning of that which subtends or underlies, it might be applied to their conception of mind without incongruity. Consciousness is thus the place of ideas, sensory qualities, images, emotions, choices, and so on; it is the workshop of mind.

² Hamilton's "Lectures on Metaphysics," Boston, p. 111.

³ "Essay," Bk. II., Ch. I., Sec. 19.

⁴ See Baldwin's Dictionary.

It is conscious of itself in all that it does, and is very active in the production of contents, relations, resolutions, and other psychological things. It might be compared to the workshop of the great patron saint of the Yuletide, if only we could think of Saint Nick as identical with his own toy-factory. Sometimes the mind is passive. Emotions sweep over it, it is bathed in the mists of moods, stimuli rain in upon it, and associations shoot across it. But it is saturated with purpose and usually it is busy building and maintaining a world.

This individual and wonderful affair is the "mind" of much modern idealism and modern psychology. It gives rise to some of the fundamental problems of modern philosophy and psychology, such as the relation of the mind to the body, the relation of ideas to their objects, the elements of which ideas are composed and the laws of their compounding and growth, the problem of finding some bridge of identity between this inner world of consciousness and the outer world of reality. Some recent psychologies discuss the question whether sensations are the same as or different from the empirical properties of things. Some still hold a doctrine differing only in the terms in which it is expressed from Berkeley's *esse est percipi*. The opposition of this consciousness to the objective world is still regarded by many, as it was by Hamilton, as "the primary and most important analysis and antithesis of philosophy."⁵

The romantic movement in the nineteenth century had much to do with emphasizing the independence and autonomy of this inner life of man, but it found the instruments of its emphasis already forged by modern philosophy and psychology. Since Kant and other philosophical romanticists, the most general of the problems of epistemology has been, How is knowledge possible? So close were the curtains of the great stage of the world drawn across the vision of the mind, that the most important question philosophy could ask was, How does the mind acquire its knowledge of what transpires on the stage? God and the absolute have been defined as the indifference of subject and object and as the unity of subject and object. We have heard that as this unity of subject and object does not itself stand in the relation of object to the subject, it can never be known as it is. The mystics say it can only be felt. We hear, too, that the object is only the external meaning of the mind's ideas, and a partial fulfilment of its purpose. We have feared that the complete fulfilment of its purpose might prove its Nirvana and extinction. Berkeley said that the divine mind is the external world of man's mind, but we never see God. We only see our own ideas, the laws of nature being the axioms according to which God puts ideas into

⁵ "Lectures on Metaphysics," p. 111.

our minds. The realists, from Thomas Reid to the programists, have done what they could to give dignity to this type of doctrine by protesting that what we know is real and not a mere idea. The recent concerted asseveration concerning the externality of relations is the latest edition of that dogmatic protest.

But, you say, the functional psychology! Surely the functional psychology has not been guilty of this mythology. Well, the functional psychology builds largely on biology and is the newest hopeful word on the subject of mind. But the functional psychology has not always applied its convictions ruthlessly, or one of the best known of functional psychologists in America would not be reasserting the Lockean conception of mind in his latest book, and the psychophysicists would not be wasting time over the relation of body to mind as parallelism, interactionism, or automatism. Moreover, functional psychology has not yet defined mental function in terms which are applicable to all the phenomena with which psychology deals. Largely because of its conception of mental function as a reflex act, the psychologist begins with a chapter on brain anatomy and physiology and then opens a new chapter when he wishes to speak of mind or consciousness. Owing to the reflex act conception of mental function in combination with the traditional conception of consciousness, his treatment of his subject lacks continuity and system. He discusses isolated topics, and he does it in such a way that the student who happens to look up from his page to behold the living presence of a man often wonders whether there can be any connection between the two. The psychologist's mind turns out to be either a nervous system or else an individual and independent thing, dwelling in the body and sustaining relations of contrast and exclusion toward all other things.

Many students of philosophy and psychology to-day are looking for a substitute for this traditional Cartesian conception of mind. Professor Woodbridge finds its chief defect in the idea that consciousness is always a subject in relation to an object. Now it happens that every object of thought is either a term or a relation between terms, and if consciousness is not to be regarded as a term related to other terms called its objects, it must be a relation. Hence, as every one knows, Professor Woodbridge holds that consciousness is simply an order of relations like time and space. It is like time and space in being an order of relations, but unlike them in the type of relation which it denotes. Consciousness is an order of relations of implication and suggestion. Professor Woodbridge has not, so far as I know, compromised his conception by insisting that this order of relations is objective rather than subjective, thereby reasserting the very dualism which his conception would avoid. His

realism is consequently no mere dogmatic protest against subjectivism. Indeed, his assertion that consciousness is an order of relations analogous to time and space is, in interest and importance, the first creditable attempt of any recent realist to construct a positive theory of knowledge which is more than a protest. Here is something which had not been said before, a doctrine which might well serve as the program of further constructive work.

Meanwhile, certain factors of experience point to legitimate uses of the terms conscious and consciousness. The erroneous, the illusory, the fanciful, the problematic, in short, all immediate values, stand out as unique aspects of things, and psychology might be defined as the science of such values. Everything that enters into the life of a young child is immediate, every knowing process has an immediate aspect, all the things we love, hate, or desire are of course immediate, the absolute in the sense of the unique, complete, and perfect is immediate, and so also are the useful, the beautiful, and the good. I do not mean that these things are merely immediate. Far from it. But everything which can be thought or felt or known or chosen has an immediate value, and some science should specialize upon it. Immediate value is not a thing in a sphere by itself, like a gold-fish swimming in an aquarium. It is in no sense an individual thing, it is always an aspect, a flavor, an atmosphere. Like light, it is nothing that the eye can see. It makes seeing possible, in a sense it is seeing; but what we see is always things upon which the light shines. We do not experience immediate values. On the contrary, immediate value is, or rather becomes, the experience of things. It is possessed by everything which serves as occasion for the exercise of powers and capacities of action.

How things are associated and immediate values become suggested values, how assimilation and complication transform and organize them, how reflective power develops, how an instinctive animal becomes a moral and political person, how science and religion appear—these remain as a few of the most important problems of psychology. But the language in which they are treated need no longer prejudice the mind of the student with a crude metaphysic which it will take him years to outlive. Consciousness will no longer be a wonderful universe *in parvo*, an individual thing in a world of things. It will have the significance of any abstract noun such as roundness or justness. Consciousness will be simply the continuum of immediate value. The unit of immediate value may still be sensation. But the total unity in manifoldness which comprehends all values will no longer be a mind in a body, but a person, and the self will be treated as the highest discovery of reflection.

It was certainly a mistake to confuse self-consciousness with the

reflective consciousness of self by assuming that all psychical processes are accompanied by self-perception like a running commentary to a text. *Self-consciousness* is a synthesis of immediate values due to the operation of certain instinctive motor tendencies, while the consciousness of *self* is a highly reflective synthesis of values which are largely implied and therefore mediated. The idea that the consciousness of self is a sort of continuous intuition of something called the mind or the soul is one of the most uncritical vagaries of traditional psychology. What we are conscious of in this immediate and intuitive way is always some memory, or some muscular contraction or organic condition, not the self in any true sense of the term. At times we do definitely and objectively *think* of our selves, but this is reflection, not intuition, and it is not continuous. For my own part, it is simply a case of malobservation to say that it is as easy to think of an extended thing without parts as to think of anything as thinking without being conscious that it does so. My own observation is just the opposite. When I think about myself I am not thinking about other things, and when I think about other things I am not thinking about myself.

Every one who has had the misfortune to teach psychology, ethics, and the philosophy of religions as well must have felt the lack of a psychology which develops without serious break or chasm into the other disciplines. As treated by psychology, consciousness is an individual affair, whereas a man is an absolute individual neither in his thinking, his emotions, nor his will. The psychology of consciousness recognizes the dependence of the individual upon his physical environment for stimuli; it does not sufficiently recognize man's dependence upon his social environment for his actual thoughts and emotions. It emphasizes stimulation as fundamental, it often says nothing about suggestion. Indeed, the whole matter of suggestion and social influence is treated as unscientific by a very large part of the psychological fraternity. They leave all these matters to such works as Boris Sidis's "Psychology of Suggestion," Le Bon's "Psychology of Peoples and Psychology of Crowds," "Les Lois de l'Imitation," and other books written chiefly by sociologists. Consequently the foundations of logic, ethics, and the philosophy of religions are not furnished by empirical psychology. Aside from James's brilliant chapter on the consciousness of self and Baldwin's discussions of the self in his "Social and Ethical Interpretations," contemporary psychology offers the merest scraps and fragments of such a basis, and even these chapters stand out as logically unrelated to other chapters of their authors' psychologies.

The teacher of ethics must either try to invent a psychological foundation for his subject, gathering what materials he can from the

sociologists and the writers on imitation and suggestion, or else leave his teachings without scientific foundation. The former procedure is unconvincing to the student, and the latter leaves him without a guide out of the wilderness of ethical methods to which he is introduced. It is all very well to write psychology for the sake of psychology, and to work steadily under the lead of facts. We all believe in scientific method, but contemporary psychology is far less scientific than she should be. She has permitted the reflex arc concept and methods of investigation based upon it to blind her to the actual laws of experience. She has permitted a traditional, almost mythical notion of consciousness, devised originally in full view of the doctrine of a future life, to stand between her and the men and women of this world. We need a psychology of human conduct to supplant the psychology of consciousness.⁶

I have had dreams of such a psychology. It begins with an account of the law of mental growth, the combined law of selection and repetition among modes of action. It proceeds to a description of all the capacities of action with which a child comes into the world, with some definition of the difference between a human babe and the lower animals, and some hint as to the child's capabilities of growth. It should contain an account of the child's environment, the *milieu* in which he must grow up. It should devote a chapter or two to the immediate values which are the child's life, and proceed to the laws of association and suggestion. It should trace the growth of that distinctly human thing, the consciousness of self and the reflective aspect of the world which comes with it. And there should be chapters on perception, imagination, reasoning, emotion, volition. Last of all should stand the psychology of truth, utility, esthetic value, and that sense of individual completeness and perfection which plays so large a part in all forms of religion. In this psychology consciousness is the principle of continuity, sensation the unit of discrete value, and the self the totality within which all its studies fall.

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⁶It is refreshing to see such a psychology outlined in the opening paragraphs of the supplement to the last edition of "Men of Science."

SOCIETIES

THE NINETEENTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE American Psychological Association met at Minneapolis, December 28-30, 1910, for the nineteenth annual meeting amid fortunate external conditions as regards both weather and place of meeting. Although there were the usual number of persons in attendance at the sessions, there was a notable absence of eastern psychologists, but five registering from east of the Alleghanies. On the other hand there were a number present from the far west. There were smokers at the University of Minnesota and the usual social functions. The sessions were held in close proximity to the psychological laboratory, which was open to inspection during the week.

The one subject which more than any other dominated the meeting was the use and meaning of the word consciousness. Of the thirty-three names which appeared on the program for the three days' sessions, one third were scheduled for papers or discussions on this topic. The president's address was upon "The Place of Movement in Consciousness," and extemporaneous discussion was freer upon this subject than upon any other. The best place on the program, the morning of the second day, was devoted to a joint session with the Western Philosophical Association, the subject of the conference being "Philosophical and Psychological Usages of the Terms Mind, Consciousness, and Soul." The term soul was quickly disposed of as signifying an entitative something with which neither psychologists nor philosophers, as such, had anything to do. The term mind, in so far as it bore a similar reference to the cognitive experience, suffered a like treatment. The heat of discussion centered about the use of the term consciousness, but the speakers were, for the most part, merely descriptive or critical, and only indirectly constructive. Mr. Bode opened the discussion for the philosophers with a critique of the definitions of consciousness that have been offered by current realism, particularly of those definitions which identify consciousness with awareness or apprehension, with context or setting, and with the function of representation or meaning. The first of these fails because it must recognize two kinds of objects, namely, those which exist only when there is awareness—*e. g.*, pleasures and pains—and those which may exist apart from awareness. Hence, it is obliged to postulate two different types of response on the part of the perceiving organism, the one being a condition of awareness and the other a condition both of awareness and of those

qualities or objects which exist only when there is awareness. This implication of the position finds no support in the present-day psychology of perception. The actual test between the kinds of objects is not this hypothetical difference in our responses, but in context or relationship. In applying this test, however, the realist confuses the distinction between fact and meaning or validity with the distinction between valid fact and validating experience. The same confusion occurs in the form of realism which discards awareness and finds in context or relationship the source of the differentiation between consciousness and object. It therefore has no advantage over the other theory. The assertion that consciousness is the function of meaning assumes a hard and fast distinction between sense quality and meaning which does not exist in fact. The view of instrumentalism is that consciousness is a name for the entities created by the psychologist in the furtherance of his particular purpose. It is not a distinct entity or function or relationship.

Mr. Tawney, the other speaker from the Philosophical Association, called attention to the objectivity of the ancients, and showed how, through the influence of Christianity and the Cartesian philosophy, the modern problem of consciousness arose. He sought to show how from the Cartesian point of view there came to be the doctrine of the subjectivity of the sense properties of things and the distinction between primary and secondary qualities, the independence and autonomy of the "inner life" or "inner world," and how this conception has precipitated the whole modern problem of the relation of the body and mind. Even the functional psychology is only an attempt to adjust this traditional conception of consciousness to the laws of biology and physiology. It is still the psychology of the inner life, a psychology of subjectivity, and as such it fails to lay scientific foundations for logic, ethics, the philosophy of religion, and sociology, which necessarily deal with human experience and human character. A return to the objectivity of the ancients would be a great gain. Woodbridge's definition of consciousness as an order of relation came in for a bit of commendation, and the speaker laid emphasis upon the phenomenon of immediate value as the distinctive mark of the kind of behavior with which psychology chiefly deals.

Mr. Angell spoke first for the psychologists, reviewing the steps by which the terms soul and mind had disappeared from current psychological discussion, and indicating certain evidences to show that the term consciousness was about to suffer a like fate. Genetic psychology, it was pointed out, could make no use of the term with its traditional connotation as signifying something open only to private introspection. In this field it was shown that the scientist could

make use of such terms only as indicated behavior. The speaker further contended that even in the study of human psychology attention was being given more and more to the objective facts connected with a mental state. Thus in the study of the memory psychologists attempt to find out the number of repetitions necessary to learn a list of nonsense syllables, the most economic periods of work and rest in the learning, the most economic method of dividing a selection to be learned, etc.—all objective facts. Facts of this sort, the speaker thought, point to an increasing interest in the study of behavior and a decreasing interest in the study of “consciousness,” a tendency so strong as to presage the possible disappearance of the word consciousness from psychological literature.

Mr. Lindley was the other speaker for the psychologists. He called attention to the fact that the breaking up of an established order in science, as well as in government, usually came about by the uprising of neglected interests. The present dissatisfaction with the term consciousness he thought was a case in point. For a long time, psychologists had insisted on using the term to mean a state of awareness, and had thus thrust out of the proper realm of psychology a large amount of material most intimately connected with states of awareness, and had invoked the phrase unconscious cerebration to take care of the neglected data. This was an unsatisfactory procedure; and after suffering this sort of treatment for a time, the neglected interests were demanding recognition, and such a revision of the term consciousness as to make it more inclusive, or the discarding of the term for some other more appropriate one. The speaker cited animal psychology, experimental psychology, and abnormal psychology, all of which were finding that the facts that they must consider could not be included under the traditional concept of consciousness.

The discussion of the foregoing papers was opened by Mr. Ewer, who insisted that there was an imperative need to fill the gap between the term consciousness as used by psychologists and the term as it was used by philosophers. He, however, did not attempt to offer a definition suited to the purpose.

Mr. Judd thought that, while it was the duty of empirical psychology to define consciousness, it was a matter of little importance to psychology what connotation was given to the term by philosophy. The speaker offered a definition based on a distinction between modes of behavior. Digestive behavior differs from locomotive behavior, and the latter from behavior based on ideas. These types of behavior tend to grow into systems, and that which characterizes the human system is that its system is a world of ideas. Now, there is need for some word to define this world of ideas. Experience might be used;

this would not be in danger of being fused with physical terms. But it might be easier to escape metaphysical difficulties by defining a new term.

Mr. McGilvary did not agree with Mr. Judd in the diverse interests of psychology and philosophy. Both sciences start with a present experiential group; this group behaves in some manner: it excludes and it includes. The behavior of this group constitutes the subject-matter both of psychology and of philosophy. He pointed out, as had Mr. Lindley before him, that we know less about the brain than we do about the behavior of the present group, to which the speaker chose to give the name consciousness. The philosopher has, like the psychologist, a real empirical problem.

Mr. Thorndike, who was scheduled to close the regular discussion, had presented his views somewhat at length on the previous day. At that time he had pointed out that psychologists were accustomed to make two sorts of statements about human nature: statements about consciousness, about the "inner life of thought and feeling," the "self as conscious," the "stream of thought"; and statements about behavior, "statements about the life of man that is left unexplained by physics, chemistry, anatomy, and physiology, and is regularly compassed for common sense under the terms intellect and character." The prevailing attitude in psychology has been to restrict its subject-matter to statements about consciousness. But this becomes meaningless when one approaches the study of animal psychology. It appears that in human psychology, as well, it is unnecessary and perhaps inadmissible to continue a pretense that there is an impassable gap, a real discontinuity, between any and all of the animal's movements and his states of consciousness. Scientific judgments about a man's toothache, about his state of anxiety, or about his judgment that three times seven are twenty-one, do not differ essentially from judgments about his stature or his temperature. The former differ in their greater dependence upon a man's verbal reports and the greater likelihood that one will have, in respect to them, certain sources of information denied to other men. But the difference is one of degree rather than one of kind. The facts of mental science need not be known to one observer only. The only kinds of facts with which science can concern itself are facts that are open to common observation. The pain of psychology must be the pain of medicine, the pain known to the physician and to the sufferer long after he had it or was it. By thus making the material of psychology objective, two noteworthy advantages are gained: first, the evidence about intellect and character offered by action and the influence of intellect and character upon action are given due attention; second, the connection of conscious states is studied as well as their composition.

In continuing the discussion after Mr. McGilvary, Mr. Thorndike pointed out that consciousness is always a feature of some particular living organism. Any definition of consciousness must take account of this, its most universal attribute. He insisted further, in opposition to Mr. Judd, that any serviceable definition of consciousness must be of such a nature as to include the behavior of the fish, the worm, and the month-old baby.

General comment upon the papers and discussion of the concept of consciousness was participated in by Messrs. Colvin, Jastrow, Huey, and others. Significantly enough there appeared no champion of the doctrine that a little while ago was used in certain quarters to define the subject-matter of psychology, namely, that psychology is the study of self-consciousness.

Consciousness was discussed from a somewhat different point of view in the president's address on "The Place of Movement in Consciousness." The modern motor theory ascribes to movement practically all of the important conscious qualities and functions. Movement is said to be the fundamental element in space and time and other forms of perception and in memory, it is the selecting agent in attention, and makes possible the complex functions of recognition, meaning, and related operations of reasoning. Examination of each of these claims in turn shows, Mr. Pillsbury thought, that they have little if any basis in fact. To assert that all qualities of consciousness are motor, means, in the last analysis, that all mental qualities are derived from kinesthetic sensations. Kinesthetic sensations are obviously too poor in quality to furnish content for all perceptions and memories. Direct observation, too, shows that other qualities are present and fully as prominent as these. The attempt to place the consciousness that accompanies movement in the motor cortex seems not to be justified by the facts. The men who hold this view bring no new evidence to controvert that which led to the abandonment of sensations of innervation, and Cushing's experiment affords convincing proof that the action of the motor cortex is known only through the nerve ends in the contracting muscles.

Close examination of the argument that preparedness for movement is the deciding factor in determining attention and other forms of selection, shows that decision is made not by the movement, but by the stimuli that induce the movement. If one stops the explanation with the condition of the motor tracts, all is left to chance; and if one asks why the motor tracts are active, the explanation is in terms of stimulus and the results of earlier experience, and is not motor. The motor explanation of recognition and meaning suffers from much the same defects. To argue that recognition comes automatically when the same movements are made as when the object was

first seen, is to assume that there are as many sorts of movement as there are recognizable objects, and that one may always recognize the movements when they appear. Neither of these assumptions is probable, to say nothing of being self-evident. Similarly, movements do not have meaning of themselves, and it is difficult to see how they can give to another conscious process that which they do not themselves possess. While the motor theory has gone too far, it has been of value in making the explanations of consciousness more concrete. All that it needs is the reminder that movements grow out of sensory and associatory processes, and that all are organized into a common system.

Educational psychology was given the right of way at a joint session with Section L (Education) of the American Association for the Advancement of Science. Mr. Baldwin presented the first paper, dealing with "Individual Differences in the Correlation of Physical Growth of Elementary and High-school Pupils." The paper gave a report of an investigation in the correlation of yearly and half-yearly increments of growth in height and weight of 350 boys and 435 girls from the University of Chicago elementary and high-schools, the Francis W. Parker school, and the Horace Mann school of Columbia University. The records include consecutive measurements of the same individuals for periods of from 3 to $11\frac{1}{2}$ years, giving a total of 6,000 measurements. A median found for all the measurements in the two Chicago schools shows that the children in the three schools form "a practically homogeneous group." Individual measurements show that there are different correlations for growth in height and weight for both boys and girls who are above the median from the correlations for those who fall below the median height. Those above begin and end their various periods of acceleration and retardation, on the average, earlier than those below the median. For boys above the median the average maximum acceleration in absolute height occurs between thirteen and fourteen years of age, and for boys below the median it occurs between fourteen and fifteen years of age. For girls of the first class the acceleration is between $11\frac{1}{2}$ and $12\frac{1}{2}$ years, while for those of the second class it occurs between $12\frac{1}{2}$ and $13\frac{1}{2}$ years of age. The same general law seemed to hold for weight.

Individuals above or below the median height maintain their relative position throughout the period studied, but they show individual variations of slight amounts at different periods. These facts show how "one may prophesy the probable development of a boy or girl after once knowing his or her relative position in regard to the given median." However, the fluctuations in weight do not follow in detail the correlations in height, as in some cases of accelerated growth in height there was an actual loss in weight.

Mr. Freeman reported a series of experiments which had for their purpose the comparison of the scope of attention and number perception in adults and children. The objects used were spots of light one centimeter in diameter, presented tachistoscopically upon a large cotton screen, the source of light being hidden by the screen. For the scope of attention the objects were arranged at equal intervals in horizontal rows, as any other arrangement favored subjective grouping. For the perception of number the objects were grouped in various ways.

The results showed that with an increasing number of objects the percentage of correct judgments decreased more rapidly in children than in adults. This difference is not a difference in the scope of attention, for experiments showed that up to four objects the judgments of children averaged only 4.5 per cent. poorer than the judgments of adults. Since the average scope of attention for the adults proved to be between four and five, the difference in scope of attention was less than one. That the adults were able to judge more correctly when five or more objects were presented was due, it was thought, to "the tendency of the adults to subjectively group the objects presented to them." The results showed that in adults the attention was better distributed than in children. An important pedagogical conclusion from the experiments was that number work should be introduced by training in the recognition and manipulation of grouped objects.

Two papers, one on "Periods of Work in Learning" and one on "Transference of Practise," were presented by Mr. Starch. Both were reports of experimental work, the first dealing with the learning to associate certain numbers with letters. In this experiment the workers were divided into three groups. The first group worked ten minutes at a time twice a day, the second worked twenty minutes at a time once a day, and the third worked forty minutes at a time every other day. Each group worked six days. The records show that the ten-minute group improved more rapidly than the twenty-minute group, and that the latter improved more rapidly than the forty-minute group. The twenty-minute group transcribed on the average thirty-one more letters in every five minutes than the forty-minute group, and the ten-minute group transcribed on the average ten more letters than the twenty-minute group.

In Mr. Starch's second experiment, the object was to determine the effect of training in one fundamental arithmetical operation upon efficiency in other arithmetical operations. A group of persons were trained for fourteen days in mental multiplication. Before and after this training they were tested in other arithmetical processes, such as adding fractions, subtracting and dividing numbers. These

tests were also made upon another group of persons who did not have the fourteen days of training. The improvement of this latter group was deducted from the improvement of the first group. This left an improvement fifteen per cent. as large as the improvement during the fourteen days. This improvement seemed due to the ability acquired during the period of practise.

A paper on "The Genesis of Attention in the Educative Process" was read by Mr. Swift. He reviewed the doctrine that clearness is the essential nature of attention and that education is the "securing of the attention to ideas which make for growth." He showed how, in the process of securing the attention, the feelings are an unsafe guide, and again how the teacher can not rely upon rewards and punishments. He pointed out that the "growing point in elementary and secondary education is the special school for delinquents and the reformatory institutions," and that the inmates of these institutions had secured the very best schools of all by their rebellion against the regular school organization. The methods employed in such schools, it was pointed out, were strikingly similar in that the teachers made a special effort to appeal to the primitive instincts of the persons to be instructed. The success of these schools, the speaker thought, pointed out to the public school the necessity of utilizing the racial and social instincts as the basis of the appeal to the attention.

Quite in keeping with the spirit of the earlier papers was Mr. Seashore's paper on "The Consulting Psychologist," which closed the joint session. This person should be "an expert in psychology who may be employed as adviser in matters pertaining to the ascertained facts of mental life with reference to their bearing upon a given practical situation, or may be employed to search for or verify such facts by a special investigation." The field to be covered is one that lies beyond that of academic teaching and research and the common application of psychology in practise. The opportunities for the consulting psychologist fall roughly into four general fields: (1) mental pathology; (2) arts, crafts, professions, and industries; (3) education; (4) eugenics. Mr. Seashore illustrated the scope of these fields in some detail and gave concrete illustrations of actual work. He further pointed out the need of the thorough training of the consulting psychologist and what in detail this training should be. He must be a man endowed with scientific freedom, yet not a pure scientist. He must be neither an administrator, a teacher, a practising physician, nor a reformer. He must be a man who, choosing the field of the consulting psychologist as a profession, will devote himself to intensive work in his chosen field, rising through a series of apprenticeships to efficiency in his work.

Discussion of this paper took the turn of personal experiences of academic psychologists in the applications of psychological facts to practical situations. Mr. Seashore, in closing the discussion, pointed out again that he was not arguing for an extension of the field of the general psychologist, but for the creation of a new department of work.

The problems of the psychology of religious experience consumed the time of an entire session, the afternoon of the second day. Mr. Starbuck read a paper on "The Instinctive Bases of Religion." He pointed out what he held had been admitted by genetic psychologists generally, namely, that there is a "sense which guides animals on through to the highest in appreciating and stressing just those reactions which are for their well-being, and depreciating and rejecting those which mean maladjustment." There are two phases which have been passed over lightly by most students. The first is the direct and immediate evaluation, in terms of the result of the reaction, of its value to the organism. This the speaker proposed to call "the cosmoesthetic sense, meaning thereby a sense of order, of relation, of proportion." Without this cosmoesthetic sense, the trial-and-error method of learning could not be learning at all, but merely a mechanically stimulated reaction-type of response. This concept, so essential to the understanding of animal life, it was held, is also essential in understanding "the non-rational successes of religion and art in feeling their way into higher modes of reaction. Religion has wilfully cultivated the non-rational and cosmoesthetic attitudes toward life."

Religion is again like the life of animals in its forward-looking aspect. This was called "the teleoesthetic sense." It is only by "the assumption of such a sense that one can explain the forward-reaching phenomena in religion and in the life of animals, the anticipatory qualities of moral intuition, the non-rational character of the poetic passion, and the apparent success of religion in feeling after an adjustment to an ideal reality."

That there is no sufficient reason for postulating an innate religious sense was the ground taken by Mr. King in a paper on "The Question of an Ultimate Religious Element in Human Nature." Contrary to the views of many thinkers, both religious and scientific, who believe that there is an ultimate religious element in human nature which they variously call a "revelation," an "inner light," a "perception of the infinite," etc., Mr. King held that religion in the individual is "a construct in which instinctive factors play a part as they do in all else that pertains to human nature." The speaker attempted to account for religion as the result of the interplay of social influences.

Mr. Haynes presented a paper on the subject of "Case-taking in the Psychology of Religious Experience." By case-taking the speaker meant a procedure similar to that of the physician or the psychiatrist in diagnosing a case. The genetic method much in vogue, and valuable as giving the background for all study of religious experience, was objected to because it reveals only the geology of religious experience and not its chemistry. The biographical method was rejected because of its long-range results and consequent snapshot sort of data, and the questionnaire method was likewise rejected for careful diagnosis. Reliance, it was urged, could be put only upon careful laboratory methods which reveal the past experiences of the subject. This method uses as sources of information observation of the subject under questioning, tests, as in a clinic, the answers of the subject studied, and the testimony of friends and relatives, where obtainable. It includes information on the family history of the subject, his past religious history, and his present religious status. On the basis of this information it seeks to diagnose the individual's religious experience, to prescribe treatment whereby he may make the most of his religious capacities, and to watch the reaction under this treatment. One objection to the method is that the clinical picture is likely to be distorted by the bias of the case-taker. A second objection is that the facts relevant to the religious experience in question are not easy to note.

In a paper on "The Genesis of the Group Spirit," Mr. Ames sought to show that imitation does not suffice to explain how the group spirit comes to arise. Within a group there are many ego and alter relations, but these are not the only effective relations at hand. Each individual in the group is determined by the relation of the group as a whole to "ends and plans which lie beyond" the immediate situation. Thus the family has relations to every other family, "to neighborhood life, and to the plan and sphere of action characteristic of the family." "The consciousness of the family group arises, not through the imitation and opposition of its members, but through their cooperation in reaching certain ends. The sense of the group comes to consciousness with the effort to work out this cooperation. To be sure, the act is carried out through the process of stimulation and response, the response being, however, not always an imitation of the act, but more often a reaction for which the stimulation is merely the cue. The overt responses become in their turn the stimuli to other acts, which again do not necessarily imitate the act already performed, because all the acts are determined by their reference to the common end. In this interplay there arises a complex of associations and implications which is felt by the participants as something urgent and insistent, as something wholly objective.

Besides exercising a marked influence on the discussion of consciousness and the psychology of religion, animal psychology was represented on the program by two reports of experimental work. Mr. Cole reported a study on "The Relation of the Strength of Stimulus to the Rate of Learning in the Chick." Chicks were taught to discriminate the darker of two passageways in order to escape from a box. Three differences of brightness were used, one easy to discriminate, one of medium difficulty, and one of extreme difficulty. For these differences in brightness opal flash glass screens were illuminated by electric lamps placed at different distances from the screen. "For each condition of discrimination, groups of chicks of exactly the same age were trained under the influence of a weak, a medium, and a strong electric shock. When the discrimination was easy for the chick, the number of trials for perfect discrimination decreased with increase in the strength of the stimulus, *i. e.*, the stronger the stimulus the quicker the learning. For medium difficulty of discrimination this relation did not hold in the case of the stronger stimulus. It produced slower instead of more rapid learning." In this particular the results confirm those of Yerkes and Dodson for the mouse. Under difficult discrimination the chicks divided into two groups, those that learned the stronger stimulus more quickly, and those that failed to make the discrimination. The latter group included one half the number of chicks tried with the strong stimulus.

Mr. Shepard reported work with rats, cats, and ants in a labyrinth. Diagrams showing certain modifications of the labyrinth used by other experimenters were exhibited. These modifications consisted in arranging the labyrinth in such a manner that the entrance to a blind alley was not uniquely distinguishable from the entrance to the other blind alleys of the labyrinth, and in arranging the entrances to the blind alleys so that by changing certain doors the labyrinth could be transformed into a labyrinth of a different sort. The results of experimentation showed that the rats and cats learned the passageways by correcting errors near the food-box first. Of two alternate passageways of the same length, that with the least possibility of error was learned first. In other labyrinths of equal difficulty the same animals dropped the errors from both ends and learned the whole in a very short time. The ants learned labyrinths built on the plan of those used for cats even when the bottoms of the alleys were frequently changed during the learning. They learned less perfectly with light on both sides than with light on one side. Rotation of a section produced no effect. Changing the side of the light after learning controlled almost absolutely the movements of the ants. Relearning when the light was changed required three

times as long as the original learning. Definite associations were retained at least a week.

A total of nine experimental studies in normal human adult psychology were reported. A paper by Mr. Hollingworth (read by Mr. Bingham) reported an experimental analysis of the normal drowsiness hallucination recorded by two observers during the past two years. This experience was described as a "flashlight perceptual fusion or complication, and is further characterized by change of type of imagery, ideal substitution, fluid association on a sensory basis, and by isolation of association trains when they tend to develop. It is accompanied by tendencies toward vastness and grandeur, by rapidly ensuing amnesia, and by absence of symbolism."

Mr. Jastrow, in discussion, called attention to the corroboration of the paper by a forthcoming book by Havelock Ellis. He thought the study was a welcome antidote to the recent Freudian movement, but raised a question as to the absence of symbolism.

Miss Richardson reported an unusual case of color-blindness. A young man about twenty-four years of age, who at one time had passed the examination for brakeman on a railroad, found difficulty in getting certain colored after-images. Investigation with the Holmgren yarns, the Nagel cards, the spectral charts, and Hering color-disks showed a complete absence of sensitivity to yellow and blue, a weak sensitivity to any but very saturated greens of a low order of light intensity, and a normal sensitivity to reds. Inquiry into the family history showed that color-blindness was congenital.

An account of some recent experiments with the projection method was presented by Miss Martin. Five series of tests were made: to ascertain whether visual images are projectable at will, and if so whether, when so projected, they are amenable to examination, and whether anything is gained by having the images so projected; to learn whether the projection method can be used advantageously to study the difference between memory and imagination; to learn whether the method is applicable to the study of illusions, hallucinations, etc.; and to learn whether the projection method can be used to advantage in investigating auditory memory and imagination. The results showed that the projection method is strong in that it furnishes an objective standard for the comparison of visual images and thus makes questions regarding visual imagery concrete; it permits an examination of the image and the standard simultaneously under the same objective conditions; it makes it easier to keep the image at the same size and distance, and diminishes the likelihood of interference by other images. Extension of the experiment showed that the method was adequate to the study of the various processes to which it was applied.

Mr. Arps gave an introspective analysis of certain tactual phenomena. Judgments were made on the intensity of standard and comparative pressure stimuli applied to the upper phalanges of the index and middle fingers. The introspections center chiefly about the subjective variations of the standard stimulus. The results show that the comparative stimuli render constancy in intensity in a given norm impossible. This seems due to the assimilative effects which are most efficient within certain limits of a series, above and below which assimilative effects are minimal or entirely lacking. The fluctuations varied according to whether the normal stimulus preceded or followed the comparative stimulus, as to whether the comparative stimulus was given in the ascending or the descending series, and according to the duration of the norm and the comparative stimulus. As to the duration of the stimulus, the results seem to show that the normal stimulus has an effect on the comparative stimulus similar to that of the comparative on the normal in regard to intensity. The above results were obtained when the norm varied in duration but remained constant in intensity. When the standard stimulus remained constant both in intensity and duration, there was no noticeable assimilative effect. Duration, then, seems to be the determining factor in the production of assimilation.

A useful demonstration of tonal fusion was given by Mr. Bingham. He showed how a clang could be reconstructed by a method of synthesis. The reeds of a harmonium are tuned to the exact pitch of a series of forks that represent all the partials which have been found to be components of the clang. The forks are mounted on resonance boxes, and by means of a depression bar there is played on the harmonium a loud chord which includes among its notes all the pitches of the desired partial tones. The tuning-forks are set into sympathetic vibration. If the loudly sounding harmonium is now suddenly silenced, there is heard a simple clang, strikingly resembling in color the sound of the monochord. Indeed, the listener is at first apt to judge that the monochord has been actuated. The forks used in the demonstration were the Koenig series c' , g' , c'' , e'' , $7b \text{ flat}''$, c''' , d''' , e''' . These are the upper partials of the fundamental 128 v.d. Although no fork of 128 v.d. was among the series, the clang as heard seemed to have that pitch. The explanation is that since each of the forks makes with its next neighbor in the series a subjective difference of 128 v.d., the total effect is a difference tone sufficiently intense to predominate strongly over the objectively weaker higher tones, and to serve as a fundamental for the clang.

A case of colored gustation was reported by Miss Downey. Through reliance upon the color and tactual components of taste blend, a young man was enabled to pass accurate judgments upon

taste qualities. His thresholds for the presence and the recognition of sweet, sour, bitter, and salt were found to be average. Extensive stimulation and the presence of an odor increased the vividness and the persistency of the taste colors. They did not appear in minute stimulation. These taste colors were definitely localized in the mouth, were of a hallucinatory vividness, and possessed a uniform color tone and persistence under stimulation. The presence of objective colors introduced noticeable conflicts with taste colors; they tended to conflict with each other, to modify each other, and to fuse at times. The interpretation offered was that the synesthesia was an actual part of the perceptual fusion and in the present case easily accounted for by the color stimulation present in taste experiences.

Abnormal psychology, mentioned frequently in the course of the general discussions, came in for one paper. Mr. Huey called attention to certain matters of classification and terminology which had been settled tentatively by the American Association for the Study of the Feeble-minded at its Lincoln meeting, May, 1910. This classification follows:

1. The term feeble-minded is to be "used generically to include all degrees of mental defect due to arrested or imperfect mental development as result of which the person so affected is incapable of competing on equal terms with his normal fellows or managing himself or his affairs with ordinary prudence."

2. The feeble-minded are divided into three classes, viz.:

Idiots.—"Those so defective that the natural development never exceeds that of a normal child of about two years."

Imbeciles.—Development higher than that of an idiot, but not exceeding that of a normal child of about seven years.

Morons.—Higher than imbeciles, but not exceeding the mental development of a normal child of about twelve years.

Mr. Huey discussed this classification, pointing out that the Binet scale has proved itself most useful thus far in determining mental age, but other scales of norms are needed. Following Binet's suggestion, it may be well to apply these terms only when the mental retardation amounts to at least three years, or to at least two years when the child is not above nine. The term *retarded* may be used for the lesser degrees, permitting *backward* as its popular equivalent. Examination and classification in these terms, at the Illinois Institution, shows imbeciles to be the most numerous, morons next, and idiots least, though a mental age of one and a half to two years is the most frequent of all. Admissions above the mental age of ten are infrequent and hard to retain. Above twelve they are almost unknown, though this is the most populous and most troublesome zone

of defect. Special study of 32 of these border cases shows lines of transition from feeble-mindedness to "normal" dullness and instability, to neurasthenia, hysteria, insanity, epilepsy, and suggests these and other groupings of border cases. The characteristics of each group should be brought out by further clinical studies. New tests for local geographical orientation, for ability to classify objects, and for levels of play seem likely to be of service.

On recommendation by the council, amended by the association, the following resolutions were voted: (1) that the association extend a hearty welcome to the Seventh International Congress of Psychology for its meeting in 1913; (2) that in place of the regular meeting in December, 1912, the association meet in the spring of 1913 in conjunction with the International Congress; (3) that a committee, composed of Messrs. Cattell, Münsterberg, Sanford, Titchener, Watson, and Bingham, be appointed to cooperate with the officers of the congress.

Professor Carl Seashore was elected president and Professor W. V. D. Bingham was elected secretary for the ensuing year. Two places on the council were filled by the election of Professors Pierce and Warren. Through the secretary announcement was made of the proposed publication of *The Journal of Animal Behavior* and the *Animal Behavior Monograph Series*, both publications to begin with the first month of 1911.

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REVIEWS AND ABSTRACTS OF LITERATURE

Theology and Human Problems: a comparative study of absolute idealism and pragmatism as interpreters of religion. EUGENE WILLIAM LYMAN. New York: Charles Scribner's Sons. 1910.

Professor Lyman has been known for some time to his colleagues as a successful teacher and the author of a number of thoughtful articles which have revealed a sound philosophical training and an agreeable literary style; but this book, which consists of the Nathaniel William Taylor lectures delivered before the Divinity School of Yale University in the year 1910, is his first introduction to a larger public.

It may be said at once that the impression which is produced is a favorable one. The author shows himself a theologian of independence, grasp, and virility, a welcome addition to the list of constructive thinkers in the field of the philosophy of religion.

In the first place, he is master of a clear and lucid style. No one is for a moment in doubt as to what he means, and he has, moreover, the faculty, possessed in supreme degree by the great leader of the pragmatists, whose untimely departure we all mourn, of vivid and happy illustration.

In the second place, he writes out of an adequate knowledge. Professor Lyman knows his philosophy and is able to use it without being burdened by the consciousness of his knowledge.

In the third place, he shows evidences of independent constructive power. A sense of proportion marks his workmanship, which gives pleasure to the man who is accustomed himself to deal with problems of construction.

The subject which he has chosen is "Theology and Human Problems," and the task which he has set himself is a comparative study of the two methods of approach to these problems which divide the attention of serious thinkers to-day. Four problems engage the author's attention: first, the problem of our knowledge of God; second, the problem of the nature of the religious experience; third, the problem of the interpretation of the world, as a whole, or, in other words, the question at issue between teleology and mechanism; and fourth, the problem of evil.

The methods of approach which Professor Lyman contrasts are those of absolute idealism and of pragmatism. By absolute idealism he understands the doctrine that "mind is the only reality, and every existing thing is part and parcel of some mind" (p. 10), with its corollary that the ultimate test of reality is "logical necessity" (p. 14). By pragmatism, on the other hand, he understands the doctrine that will is more fundamental than intellect in human nature, that knowledge is "essentially purposive" (p. 43), and that truth is to be tested by its final results. In the first chapter, indeed, he distinguishes Ritschlianism as a third type, but soon dismisses it as a half-way house to pragmatism. In this the reviewer believes that he is correct. Ritschl, following Kant, makes a sharp contrast between the theoretical and the practical reason. He believes in two kinds of knowledge, the theoretical knowledge of science and philosophy, which deals with causes, and the practical knowledge of ethics and religion, which deals with values. Thoroughgoing pragmatism, on the other hand, rejects this dualism. It bases all our certainties, intellectual as well as moral, upon practical demands, and judges theory in every realm by its serviceableness. Professor Lyman believes that in this attitude pragmatism is entirely right. Between its position and that of absolute idealism he sees no middle way. They are the two great highways to knowledge, between which we must choose, and he himself unhesitatingly chooses the former.

It is impossible within the limits of this brief review to follow the author's reasoning in detail. In general, it may be said to be a defense of the ethical as contrasted with the mystic interpretation of religion. A few sentences will serve to indicate the author's attitude toward one question which has been keenly debated in recent years, that, namely, between monism and pluralism. Professor Lyman refuses to be impaled on either horn of the dilemma. It would seem, he tells us, that ethical monotheism, his own position, "should neither seek the protectorate of a rigid monism nor allow itself to be stampeded by pluralism, but that it should stand forth as an independent metaphysical point of view. The definition of monism, as given by its chief sponsors, is too restricted, and that of pluralism is

too loose, to do justice to the facts of life when moral and religious experience is included, and we should insist on refusing allegiance to either of these terms till one or the other of them has been remolded and developed in accordance with the requirements of an ethical metaphysics" (p. 147).

To the philosopher who desires to keep in touch with the newer thought in theology this book of Professor Lyman's may be confidently commended.

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Introduction to Philosophy. WILHELM JERUSALEM. Authorized translation by Charles F. Sanders. New York: The Macmillan Company. 1910. Pp. x + 319.

This is a translation of the fourth edition of the German work. It is very unlikely that an introduction to philosophy has ever been, or ever will be written, which will satisfy more than a small minority of philosophy teachers. Jerusalem's book is, however, a real addition to the field. It has many merits, and perhaps no more defects than are bound to attach to any method of dealing with the subject that may be selected. The plan that is followed is in general to combine a brief historical and analytic survey with a constructive outline which sets forth the writer's own interpretation. There are naturally objections to be found to either of these procedures. Both are likely to be too sketchy to be altogether satisfying; and in the expression of his own opinions a writer is under temptation to let his private idiosyncrasies take space from the real task. But the first objection belongs, so far as I can see, to the ideal of an introductory book, rather than to any particular form that it takes; and Jerusalem's point of view is sufficiently synthetic and objective to avoid any very sharp condemnation on the second ground, and to enable most teachers to get without much trouble a point of attachment. It is to be expected that the German origin will present certain drawbacks. Most of the references to recent literature are naturally to Germans—though it may be noted that among other countries America fares particularly well; and in some instances, where the authors are not yet fully naturalized, the treatment is alike too extended and too general to be easily utilized. This, I suspect, is the case with the rather extended account of Avenarius, for example; and occasionally in other places the author assumes an acquaintance with recent German developments which the average American professor possibly ought to have, but in all likelihood does not possess. This, however, does not affect seriously the general value of the book. On the whole the treatment is lucid, straightforward, and reasonably exact; and it is rendered into clear and adequate English.

It is perhaps hardly fair to attempt much criticism of the doctrine of a book which is professedly an introduction. On the whole, I am inclined to think that the attempt to keep such a book entirely objective necessarily involves the lack of any real organization and unity in it; and until philosophers all agree of course a personal point of view will be unacceptable to its opponents. If the writer wishes to insert his own doc-

trines, and does this clearly and with due perspective, he has perhaps met all legitimate pedagogical demands; many teachers, indeed, will be glad to find things to criticize, up to a point, as an aid to class method.

It would not be difficult to find a good many things in detail with which to quarrel, especially in the metaphysical section; and there is a tendency, more noticeable in the sections that deal with some of the other disciplines, toward generalizations, sociological generalizations in particular, that lack something in sharpness of outline and logical rigor. But perhaps this is a necessity of the case, and on the whole the effect of the book is cumulative in leading up to a pretty definite philosophical outlook. Two quotations will perhaps sufficiently indicate the general animus. Philosophy is defined, to begin with, as the "intellectual effort which is undertaken with a view to combining the common experiences of life and the results of scientific investigation into a harmonious and consistent world theory; a world theory, moreover, which is adapted to satisfy the requirements of the understanding and the demands of the heart." Again, of method: "The formal demands which the present age imposes upon an effective philosophy are, that it should be empirical and strictly scientific in its nature and method, and that it return to sound common sense." "Briefly stated, the points of view secured for philosophy by means of this influence are the *genetic*, the *biological*, and the *social* methods of studying *psychical processes*." The book has some points of contact with American pragmatism, though the actual treatment of pragmatism in the text will scarcely be accepted as adequate.

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JOURNALS AND NEW BOOKS

MIND. October, 1910. *The Psychological Explanation of the Development of the Perception of External Reality* (pp. 457-469): H. W. B. JOSEPH. — An examination of Professor Stout's view that "the two factors involved in the perception of external reality are motor adaptation and the projection of the self." It is maintained that this view lacks "real coherence." *The Truth of Protagoras* (pp. 470-492): C. M. GILLESPIE. — Objection is made to Mr. Schiller's interpretation of the dictum of Protagoras, "Man is the measure of all things," as being the first statement of the fundamental principle of pragmatism, or humanism. "There is no justification whatever for the view that Protagoras taught that truth is a 'value' or any similar pragmatist doctrine." *Difference as Ultimate and Dimensional* (pp. 493-522): ARCHIBALD A. BOWMAN. — An examination of the negative logical judgment "S is not P." It is contended that "such an assertion is in its nature *sui generis*," that "behind the logical indifference to quality there is a vital distinction of kind between the affirmative and negative judgment," a distinction that is "unsolvable," and which, when taken into account, renders impossible the logical process of obversion. *The Apprehension of Feeling* (pp. 523-532): HELEN

WODEHAUSE. — The contention is, in opposition to Dr. Stout, that the primary act in feeling "is simply to know-and-desire," and that "to know that we desire" is an act of subsequent reflection. *Discussions: Absolutism in Extremis?* (pp. 533-540): F. C. S. SHILLER. — It is pointed out that Mr. Bradley's article No. 74, in addition to a restatement of his views, contains important admissions "which threaten to end the long controversy about the logical character of absolute idealism." *Philosophic Pre-Copernicanism.—An Answer* (pp. 541-543): H. A. PRICHARD. — A reply to Mr. D. L. Munay's criticism of two chapters of his "Kant's Theory of Knowledge." *The Enumerative Universal Proposition and the First Figure of the Syllogism* (pp. 544-546): H. W. B. JOSEPH. — A brief objection to Mr. W. J. Robert's above-entitled paper appearing in the April number of *Mind*. *The Humanistic Theory of Value* (pp. 547-549): JOHN E. RUSSELL. — Indicating "how a pragmatist can successfully meet Mr. Quick's criticism of "the humanistic theory of value." *Critical Notes*: Emile Boutroux, *Science and Religion in Philosophy*: ARCHIBALD A. BOWMAN. Georges Lechalas, *Étude sur l'Espace et le Temps*: LEONARD J. RUSSELL. Leslie J. Walker, *Theories of Knowledge: Absolutism, Pragmatism, Realism*: F. C. S. SHILLER. E. B. Titchener, *Lectures on the Elementary Psychology of Feeling and Attention*: H. J. W. J. M. O'Sullivan, *Old Criticism and New Pragmatism*: R. A. P. ROGERS. Léon Robin, *La Théorie Platonicienne des Idées et des Nombres d'après Aristote. Étude Historique et Critique*: R. PETRIE. L. Levy-Bruhl, *Les Fonctions Mentales dans les Sociétés Inférieures*: R. R. MARETT. *New Books. Philosophical Periodicals. Notes.*

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Bergson, Henri. *Creative Evolution*. Authorized translation by Arthur Mitchell. New York: Henry Holt and Company. 1911. Pp. xv + 407. \$2.50.

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DeVries, Hugo. *The Mutation Theory: Experiments and Observations on the Origin of Species in the Vegetable Kingdom*. Volume II. Translated by J. B. Farmer and A. D. Darbishire. Chicago: The Open Court Publishing Company. 1910. Pp. viii + 683. \$4.00.

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Lipps, G. F. *Weltanschauung und Bildungsideal*. Leipzig und Berlin: B. G. Teubner. 1911. Pp. viii + 230.

Natorp, Paul. *Volkskultur und Persönlichkeitskultur*. Sechs Vorträge. Leipzig: Quelle und Meyer. 1911. Pp. iv + 176.

NOTES AND NEWS

THE Government Printing Office at Washington has issued an abstract of the "Report on Changes in Bodily Form of Descendants of Immigrants," by Professor Franz Boas, of Columbia University. The questions on which evidence was collected were the following: "1. Is there a change in the type of development of the immigrant and his descendants, due to his transfer from his home surroundings to the congested parts of New York? 2. Is there a change in the type of the adult descendant of the immigrant born in this country as compared to the adult immigrant arriving on the shores of our continent?" The following is from the statement of the general results of the investigation: "In most of the European types that have been investigated the head form, which has always been considered one of the most stable and permanent characteristics of human races, undergoes far-reaching changes due to the transfer of the people from European to American soil. For instance, the east European Hebrew, who has a very round head, becomes more long-headed; the south Italian, who in Italy has an exceedingly long head, becomes more short-headed; so that in this country both approach a uniform type, as far as the roundness of the head is concerned. The head form may conveniently be expressed by a number indicating the transversal diameter (or width of the head) in per cents of the diameter measured from forehead to the back of the head (or the length of the head). When the head is elongated (that is, narrow when seen from the front, and long when seen in profile), this number will be low; when it is rounded (that is, wide when seen from the front, and short when seen in profile), this number will be high. The width of the head expressed in per cents of the length of the head is about 78 per cent. among Sicilians born in Sicily and about 83 per cent. among Hebrews born in eastern Europe. Among Sicilians born in America this number rises to more than 80 per cent., while among east European Hebrews born in America it sinks to 81 per cent. This fact is one of the most suggestive discovered in the investigation, because it shows that not even those characteristics of a race which have proved to be most permanent in their old home remain the same under the new surroundings; and we are compelled to conclude that when these features of the body change, the whole bodily and mental make-up of the immigrants may change. These results are so definite that, while heretofore we had the right to assume that human types are stable, all the evidence is now in favor of a great plasticity of human types, and permanence of types in new surroundings appears rather as the exception than as the rule. . . . In order to understand the causes which bring about these alterations of type, it is necessary to know how long a time must have elapsed since the immigration of the parents to bring about a noticeable change of type of the offspring. This investigation has been carried out mainly for the cephalic index, which during the period of growth of the individual undergoes only slight modifications. It appears in those cases that contain many individuals whose parents have been residents of America for a long time that the influence of American environment upon

the descendants of immigrants increases with the time that the immigrants have lived in this country before the birth of their children."

At the meeting of the Aristotelian Society on February 6 Miss H. D. Oakeley read a paper on "Value and Reality." The theory that the world of values is objective in its source may be connected with natural realism. The qualities of the objects of perception which are objective for natural realism are the experiential foundation of our estimates of value. The "secondary qualities" have a degree of reality; the stage at which the recognition of value is aroused in consciousness is a higher degree. This view is founded on the exposition of natural realism in the late Professor Laurie's "Synthetica," though it does not follow that exposition into the absolute idealism in which it seems to culminate. A recognition of the reality of value seems also to be involved in the metaphysical meaning of Plato's ideal theory. The character of experience as not only significant, but also symbolic, is not adequately explained either psychologically as association, or epistemologically as expression of that which is universally valid. The reality of the world increases in proportion to its increase in value, and the valuable is a force with power over the existent. The ideas can not intelligibly be reduced to forms of a force originally without value. From the point of view here taken, the appearance of things as in space and time, if symbolic, must be so in that sense in which the symbol is part of the truth. Reality must also be allowed to individua, since the simple witness of experience, if not corroborated on the plane of the understanding, has its credentials in the recognition of value. Of this reality, however, the inner side seems to be unknown to us. The account of the reality of things as ultimately purpose is unacceptable, since experience of reality would thus be inseparably associated with practical experience. The truth in this view appears to be that there must be some value as the substance of any reality. The law of value in nature, corresponding to that of purpose in human life, may be described as manifestation. The metaphysical relation of purpose to that of other values is in this view the struggle from a lower to a higher grade of reality, or a form of the tendency of any existence to increase its value.—*The Athenæum*.

DURING the current month the Reverend J. Nevell Figgis, Litt.D., Honorary Fellow of St. Catharine's College, Cambridge, delivered three lectures at Columbia University on "Nietzsche," "George Bernard Shaw," and "Bergson."

THE Macmillan Company announce as forthcoming "The Social Basis of Religion" by Professor S. N. Patten. Professor Patten describes religion in terms of social function instead of in terms of theological ultimates.

GEORGE PLIMPTON ADAMS, assistant professor of philosophy at the University of California, has been appointed lecturer in philosophy at Harvard for the year 1911-12.

GEORGE CLARKE COX, Ph.D. (Harvard, 1910), has been appointed lecturer in philosophy at Dartmouth College for the year 1911-12.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

CONTINENTAL CRITICS OF PRAGMATISM

I. FRENCH CRITICS

IT is now possible to obtain a literal orientation of pragmatism. The continental critics have taken the western philosophy in hand. In this there is manifest advantage, since by the time the ardent movement has crossed the Atlantic the controversial spirit has cooled off. For this orientation, for this alleviation, let us turn to the Latins, for it is they who are especially fitted to interpret our ways of thinking—the French for their clarity of style and luminous vision, the Italians for their penetrating practicality and social instincts. We begin with the Gauls because they, in a fine revenge for the material partition of their country, have become adepts in the intellectual delimitation of other realms. Many of these critical Cæsars are known for their commentaries, but not all. We are familiar with the conquerors and classifiers of the dark continent of Kant, but not with those of the land of James. Here is a new race, they exclaim; no one has understood it; let us therefore undertake the task of setting in order these transatlantic barbarians. “When,” says Marcel Hébert, “I first heard the word pragmatism, I fancied it was a sort of American slang—a useful practical formula to put truth at the service of men of affairs and men of action, men not particular as to the point of view of logic and criticism. But the interest with which their books have been welcomed in Latin countries has undeceived me. It appears that there are so many excellences and also so many paradoxes in the system that it would be useful to explain them in their broad outline.”¹

In the same manner J. Bourdeau refers to pragmatism as a system to be expected of Yankees, because it is a philosophy of results, a philosophy of action, a philosophy of profits. It is in harmony with the American attitude towards science, which puts Edison and Morse in the first rank, Ampère and Fresnel in the second. Nevertheless, for all its insistence on the practical, it has

¹ “Le pragmatisme,” Paris, 1909, Avant-propos.

its good points. One may expect from a semi-barbarous race only a philosophy of engineers, merchants, brokers; yet that philosophy is an excellent antidote to an aristocratic intellectualism, disdainful of consequences. In France the prestige of ideas has been abused, the people have become soft, the classes over-civilized. Hence the value of the pragmatist as an apostle of energy, a philosopher who proves his ideas not by dreaming them, but by acting them. In short, pragmatism is a practical matter, obvious to men of affairs, "business men," plutocrats by economic power and the conquest of material comfort. Now while there is to be recognized in pragmatism the Anglo-Saxon instinct, with its scepticism of pure ideas and its disregard of general notions, its love of empiricism and its aversion to complexity of thought, yet there are in France men not without affinities with James and Pierce. Thus Bergson attacks the so-called general truths of science, and traces the hypothesis to a personal source. So, too, Maurice Blondel advocates a method which would confront the various systems of intellectualism, from Descartes to Taine, from the point of view of practical consequences.²

This attitude of gleaning the practical factors from rationalistic systems is what Rey designates as the new tone in philosophy. It is not an eclectic positivism, for positivism lays too much stress on pure science, and tends to disregard the emotional and passionate side of life. Nor is it the French neo-criticism which piously hands down the traditions of absolutism from Descartes to Hegel. The latter group of thinkers is a mere survival of the past; somewhat fossilized, it has not taken account of the anti-intellectual and mystical current, which starts with Schelling and Schopenhauer in their rehabilitation of the indeterminate, the unconscious, the irrational. Hence it is that recourse should be had to the aspirations of the heart, to the obscurer instincts of humanity. True knowledge is, in fine, to be sought not from positivistic science, not from proud intellectualism, but in the intuitions of sentiment, in moral ideas, in religious beliefs. Of all these pragmatism is the synthesis.³

From the French critics thus far cited it is evident that the "western Goth, so fiercely practical, so keen of eye," is, after all, not so barbarous, but well in the vanguard of progress. At the last International Congress of Philosophy Émile Boutroux showed how, of the two dominant groups of thought, the pragmatists have assumed the most advanced position. On the one hand are the intellectualists who, completely satisfied with science, believe that there is little knowledge outside its boundaries. On the other are the anti-intellectualists who, going beyond the present limits of science,

² Bourdeau, "Pragmatisme et modernisme," Paris, 1909, pp. 45, 60, 62.

³ Abel Rey, "La philosophie moderne," Paris, 1908, pp. 22-25.

honor certain irrational powers of the human soul, such as instinct, intuition, the sense of action. Berthelot stands for the former group; inheritor of the doctrines of the eighteenth century, successor of the Encyclopedists, he makes a religion of science and believes that it is the sole irrefragable foundation for the morality of races as well as of individuals. Up to 1890, continues Chaumeix, such a rôle was held by science in philosophy, sociology, and morality. But in 1893 Emile Boutroux maintained against the mechanism and materialism of the scientists the notions of liberty and spirituality. Next, Ferdinand Brunetière followed with his attack on the fallacies of science, and showed that phenomena are always in formation and that opinions must be modified by new experiences. Finally, Henri Poincaré, criticizing the values of the sciences, showed that, in place of the fixity of general idéas, we must hold to the relativity of hypotheses, that the simplicity of nature is but a convenient convention, and that scientific formulæ are but approximate accommodations to reality.⁴

All this prepared the public the better to understand Bergson and James in their criticism of intellectualism. Of these two authors the latter was perhaps the most advanced, for five years prior to the former's first book James showed that there already existed in America a tendency to return to direct observation and psychological experience. Translated into French, the works of James, with their simple and vivid style, were most acceptable to Gallic taste. In subject-matter they went beyond the outworn positivism of Comte, Renan, and Taine, since their author held that man progresses not so much by reason as by action. From these, his virtual predecessors, the American obtained a terminology and observations useful in explaining the mechanism of our living. But to these he superadded the vision of a spiritual and personal power in every man, and to the neglected emotions he gave the proper function of a motive force. For example, without attempting to solve the question of freedom (which appears to transcend psychology), he attributed to the belief in liberty a principle of energy and of improvement. So his recent book, "A Pluralistic Universe," in its vigorous attack on certain doctrines once made in Germany, rejects monism with its immovable and glacial absolute, and prefers a recourse to a pluralism which allows for human communication with diverse powers by means of the subconscious.

So much for pragmatism as taught by its cultivated American protagonist. Its practicality and energy exhibit the excellences of the Anglo-Saxon temperament. Yet it has its weaknesses and its

⁴ André Chaumeix, "Les critiques du rationalisme," *La revue hebdomadaire*, January, 1910, pp. 5-15.

defects. It has been useful in its attacks upon an overweening rationalism, but, like rationalism itself, its critical output has been over-proportionate to its constructive results in sociology, morals, and pedagogy.⁵

The defects of pragmatism, here merely intimated, are more fully exposed by the other critics. Rey had broadly divided the contemporary groups into two—rationalists and irrationalists. If the former have been guilty of the dogmatism of the idea, the latter are equally guilty of the dogmatism of the act, and thereby prevent the ending of the unfortunate divorce between science and philosophy. The old positivism had accentuated the differences between the two disciplines, for to the followers of Comte knowledge did not necessarily lead to action, but pure thought, the correct formula, was deemed entirely sufficient. Now pragmatism has gone to the other extreme. If, according to it, cognition follows the necessities of action, then science is not the mistress but the handmaid of fact. No longer principal, but subordinate, science has become merely a special industry. Thus, with Bergson, there is no scientific truth, but only truths—contingent and fortuitous constructions, valuable not in themselves, but only as instruments.⁶

All this upholds the contention of James that pragmatism is not a mere renewal of positivism. No Comtean would put on the same level the experiences of science, of metaphysics, and of religion. But this is what the pragmatists do; they reverse the Comtean formula of development when they assert that pragmatism can utilize all experiences, from the clearest to the most obscure, from the clarities of pure science to the obscurities of the subconscious. For the metaphysicians Rey considers this a perfect windfall. Just as orthodoxy in the face of modernism has brought back the practical sense of dogma, in place of its esoteric or real sense, so in America he predicts a violent return to older forms of belief.⁷ Rey makes the prediction, Bourdeau carries it out. It is to him a paradox that a Yankee philosophy should lead to mysticism, but such seems to be the fact. While the French critic refers this to a reaction against scientific snobism, tracing it through the pragmatic appeal from the intellect to the emotions,⁸ in the case of James an American might prefer to trace the latter's mystic leanings to a directly inherited interest in Swedenborgianism. But, whatever the source, it is a veritable paradox that Occidental thought is approximating Oriental. The American mind-cure has no historic connections, as

⁵ "Les critiques du rationalisme," pp. 19-32.

⁶ "La philosophie moderne," p. 31.

⁷ *Ibid.*, pp. 31, 36.

⁸ "Pragmatisme et modernisme," p. 63.

Bourdeau would hold, with the spiritual exercises of Ignatius de Loyola; except for the Quakers, mystic manuals have had no previous vogue among the cultivated classes in our land. Rather should this so-called auto-imperialism, this revived Yoga system, be traced to the Platonic element in New England Puritanism and more especially to Emerson's interest in the sacred books of the East. It is therefore not untrue to say that the most ingenious of the modern remedies against the evils which assail us was discovered in America in the mind-cure, the gospel of relaxation, the "don't worry" movement. And an American, cognizant of this degraded form of New England transcendentalism, this perversion of the Emersonian doctrines of self-reliance and compensation, can agree with the witty Gaul when he compares the mind-cure to the grinding of the soul, like a hand-organ, for the sake of those optimistic previsions: "Fata viam inveniant; tout s'arrangera, parbleu! parfait! bravo!"⁹

At first sight, the doctrine of auto-suggestion, of auto-persuasion, might appear a mere by-product of pragmatism; yet Bourdeau claims it as a legitimate though extreme resultant of previous processes. Therein intelligence plays but a secondary and subordinate rôle, and thereby pragmatism shows its essential hostility to rationalism. That hostility is historically shown in the way in which the movement makes a *tabula rasa* of all that is not English or American. Descartes, Leibnitz, and Kant do not exist for the pragmatist; with him, as with Herbert Spencer and Lord Bacon, there is manifest a positive disdain for past thought.¹⁰ This contempt for culture strikes all the French observers as an earmark of the Anglo-American movement. Chaumeix has already noticed it. Rey devotes a chapter to the pragmatist disregard for the traditional solutions of the problem of truth,¹¹ while Hébert neatly turns the tables by asking if these contemners of the past have not in fact had numerous predecessors. The latter writer's search for sources is perhaps carried to excess; he has made too many of the historic figures pragmatists unconscious of their pragmatism. Socrates is obviously an early representative in the line of succession, also the nominalists in their insistence on the purely human value of general terms. But to make Kant a precursor of James is far-fetched. The primacy of practical reason is one thing, its pragmatic basis another. It is hardly a seductive pragmatic distinction that one knows the existence, but not the nature, of an object.¹² James, and particularly Dewey, are opposed to such a transcendental agnosticism. The one makes truth

⁹ "Pragmatisme et modernisme," pp. 64, 89, 90.

¹⁰ *Ibid.*, p. 91.

¹¹ "La philosophie moderne," Ch. VII.

¹² "Le pragmatisme," pp. 66-68.

"happen to an idea. It becomes true, is made true by events." The other defines truth as "an experienced relation of the characteristic quality of things."¹³ The French interpreter is perhaps unaware of the American pragmatist's aversion to the high *a priori* road of Kant. From this arises his false identification of the philosophers of Cambridge and of Königsberg. He is nevertheless correct in expressing his surprise at beholding Schopenhauer numbered among the precursors of pragmatism. His metaphysics is no doubt voluntaristic, but the famous will to live is not the supreme principle. It is intelligence which redeems the will by exposing the futility of that will and the ultimate necessity of self-denial and self-annihilation.¹⁴ Hébert is right. There has been a tendency to connect the will to live with the will to believe and to trace the pragmatist's voluntaristic element back to Schopenhauer through Nietzsche and Von Hartmann. But that is a confusion of temperaments; to put James among the pessimists is an absurdity to one familiar with his personality. The will to believe, as his compatriots take it, is a will to believe in the better, and upon this temperamental quality, more than upon logic, is based the pragmatic doctrine of meliorism. It is unfortunate, in a way, that the flamboyant western optimism should not be somewhat modified. A dose of Schopenhauer might do the country good. In view of the trusts and the tariff, of the high cost of living and undesirable foreign immigration, many of James's readers are wondering whether he should not have put more of his "bitters in the cosmic cocktail."

The excesses of optimism, and especially of the make-believe variety offered by the so-called New Thought, have been exaggerated by pragmatism. And here the French critic might have made more of the similarities than of the dissimilarities with another movement which emanated from his own country. It is true, as he intimates, that positivism is unpragmatic in its insistence on the supremacy of reason; and that Comte, in his ardor for pure science, maintained that the human spirit should proceed to theoretical researches, completely abstracting itself from every practical consideration.¹⁵ The unpracticability of positivism is a forgotten phase of that Gallic cult which, at one time, had such a vogue in America. And so is its optimistic spirit which, through certain of its precursors, like Condorcet and the Encyclopedists, seized so strongly on influential minds of the type of Thomas Jefferson. If the French are here unaware of their past contributions to the structure of pragmatism, so are they of the present. Hébert gives the interesting information that Maurice Blondel, as

¹³ This JOURNAL, Vol. V., pp. 124-125.

¹⁴ "Le pragmatisme," p. 69.

¹⁵ *Ibid.*, p. 71.

far back as 1888, used the sacred word, but that his conscience was clear as to his having stolen the term. But Hébert has noted that, as early as 1879, Pierce's now famous article on "How to Make our Ideas Clear" was reprinted in the *Revue Philosophique*. Hence, with the possibilities of plagiarism, we are left with the materials for a philosophic *affaire scandaleuse*. But leaving that aside, Hébert shows that another of his compatriots should not be haled into the pragmatic court. The vogue of Bergson has been immensely increased by James's appreciative chapter on the author of "Evolution Créatrice," but the two thinkers should not be confused; armadilloes have stripes, but some have more than others. The two additional stripes which the French species possesses are these: the value of pure perception, the possibility of an intuition of the absolute:¹⁶ "We think in order to act; we also act in order to think. . . . It is necessary to think of being directly, without making a *détour*. . . . Here it is necessary to attempt to see for the sake of seeing, and no longer to see for the sake of acting."¹⁷

It is upon distinctions and differences of this sort that Hébert bases the varieties of pragmatism. Here he gives an illuminating classification and exhibits the various international affiliations. Of the three chief varieties, pure pragmatism is exemplified by Pierce and Schiller. Of these, in turn, the former's principle is one of method, while the latter's aim is to think the ancient formulæ over again in pragmatic terms. Of pragmatism more or less modified, we have those who admit in greater or less measure the knowledge of the nature of reality. James accords that knowledge with an increasing approximation; Le Roy makes certain concessions; Poincaré announces that we know relations. Partial pragmatism is that which is modified in regard to its extension. Here one can restrict pragmatism to the scientific fact in so far as it is scientific, or one can apply it to the theories or hypotheses and not to facts. Or again one can be non-pragmatic on the subject of science and, at the same time, pragmatic in metaphysics, in morals, in religion. As to the last there are further distinctions to be made, such as pure religious pragmatism or moralism, and modified pragmatism or symbolism. Finally, there is pragmatism in the very broad sense, the variety that attaches more importance to life than to doctrine; in general this is little more than simply a tendency towards pragmatism.¹⁸

What a classification! In addition to the thirteen varieties of American pragmatists exhibited by Lovejoy,¹⁹ we have now a host

¹⁶ "Le pragmatisme," pp. 72, 74.

¹⁷ "Evolution Créatrice," pp. 321, 323.

¹⁸ "Le pragmatisme," pp. 63, 64.

¹⁹ This JOURNAL, Vol. V., pp. 5-12, 29-39.

of transatlantic cousins, for Hébert now cites among the diverse forms of the religious species alone the moralism of Ch. Secrétan, the fideism of Pascal, Ritschl, and E. Ménégoz, the symbolism of Loisy, Le Roy, Laberthormière, and Tyrrell. Having finished his acute classification, Hébert proceeds to estimate American pragmatism from the cautious point of view of one writing for the *Bibliothèque de critique religieuse*. In regard to the theistic conception he agrees with James that, as an over-belief, it is true because it is so useful; but he recoils from the representation of the relation between man and the higher spirits as that of dogs and cats towards their masters. This sort of Pickwickian humor, which has attracted other Gallic writers, does not appeal to one who holds that the deity is an object of worship not merely because he is *primus inter pares*, but because he is the possessor of infinite perfections.²⁰ To this modern scholastic, then, God is to be estimated not solely *ex consequentiis*, but rather as an objective reality raised far above the level of probability. In fine, since human nature is capable of seeing for the sake of seeing, of knowing for the sake of knowing, it is necessary, over and above such an utilitarian pragmatism, to affirm the excellence of pure disinterestedness.²¹

SOCIETIES

THE ELEVENTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

THE Western Philosophical Association held its eleventh annual meeting at the University of Minnesota, December 28 and 29, 1910. The following officers were elected for the current year: president, A. W. Moore; vice-president, B. H. Bode; secretary and treasurer, B. C. Ewer; executive committee, E. D. Starbuck, D. F. Swenson, J. H. Tufts. The treasurer reported a balance on hand of \$59.91. Professors Samuel Weir, E. H. Hollands, G. D. Walcott, and L. A. Weigle were elected to membership in the Association. A vote of thanks was extended to the department of philosophy and psychology of the University of Minnesota for its cordial hospitality in entertaining the Association.

The program consisted of sessions on Wednesday morning and afternoon, the presidential address on Wednesday evening, and a joint session with the American Psychological Association on Thursday morning. The subject of the latter was "Philosophical and Psychological Usages of the Terms 'Consciousness,' 'Mind,' and

²⁰ "Le pragmatisme," p. 97.

²¹ *Ibid.*, p. 100.

'Soul.''' Papers were read by B. H. Bode, J. R. Angell, G. A. Tawney, and E. H. Lindley. The address of the president, Professor E. B. McGilvary, was on "The 'Fringe' of William James's Psychology as the Basis of Logic." This address and that of the president of the Psychological Association on Thursday evening were followed by enjoyable smokers.

Abstracts of the papers presented follow:

Spencer's Interpretation of Derivation: J. H. FARLEY.

The idea of force and the derivation of various experiences or ideas from the idea of force, as is well known, occupies a large portion of Spencer's study in his "First Principles." The treatment of force by Spencer, though ambiguous and nominally contradictory, is predominantly identified with the element of resistance in experience. As thus conceived we ask, What is the precise method employed by Spencer in his attempt to derive phenomena, objective, subjective, and psychophysical, from force?

Spencer does not aim to interpret or rationalize this specific problem. It might well be that he was not even conscious of its difficulties. However, this in no way lessens the interest and value of a study of the actual ideas which functioned to express for him the heart of derivation.

In a brief, abstract way we may contrast and summarize his methods of derivation as follows:

1. He does not specifically treat derivation as a process of unfolding.
 2. Nor as a mere intensity growth.
 3. Nor as a history series.
 4. Nor as a mechanical addition.
 5. Nor as a developing purpose, as in theistic evolution.
 6. Nor, finally, as the letting loose of naturalistic potentialities.
- He does specifically treat derivation as a rise of the new:
1. Through combination as fusion.
 2. Through a manipulation of the notion of intensity as alone expressive of the difference between past and present.
 3. Through a tacit assumption of bodily transference from state to state.
 4. By means of the concept of transformation in psychophysical relations.
 5. By relating the elements in a complex to one of its features and treating it as a subject or prospective ground for the other elements of the complex.
 6. By showing how a situation is a prior prospective condition of a given phenomenon.
 7. By applying a form of experienced growth to a specific element in experience.

8. And, finally, by showing how the heterogeneous develops from the homogeneous by manipulating a relatively heterogeneous environment, *i. e.*, the homogeneity assumed by Spencer is never absolute, never complete.

The Import of Propositions: DAVID F. SWENSON.

This paper seeks to establish a distinction between the *sense* of propositions and their *implications*. Most of the historical theories of the import of propositions confuse this distinction; while purporting to give the sense, they actually give one of the possible implications. They are in reality formulas for drawing from given propositions certain types of immediate inference. This is especially evident in the case of all theories that take their stand upon a distinction between subject and predicate, and which seek the nature of judgment in the relation supposed to exist between these two aspects of its meaning. The method adopted in the paper to demonstrate this thesis is a *reductio ad absurdum*; namely, the double application to typical propositions of the form of interpretation demanded by each theory, first to the original proposition, and a second time to the result of the first interpretation. This method serves to bring out into bold relief the nature of the transformation effected, and to show that it involves a real change in meaning. The conclusion reached is that no theory of the import of propositions in the usual sense is possible. The primary sense of a proposition can only be conveyed in its own terms, or in terms exactly synonymous. The historical theories are rules for inferring from a proposition of one type an equivalent proposition of a different type, and they should be used in logic to enrich the doctrine of immediate inference.

The Psychology of Punitive Justice: WILLIAM K. WRIGHT.

Westermarck, in "The Origin and Development of the Moral Ideas," has successfully traced the origin of punishment to resentment. This, however, can not be regarded as its ultimate instinctive source, since resentment is not the primary spring to any form of action, but only arises in support of other instincts that have first been thwarted. Therefore, though the immediate source of punishment is resentment, its ultimate source is always to be found in other instincts, chiefly in the gregarious instinct. In the attitude of society toward an offender, the gregarious instinct is often evoked against him, both through his attack upon the social order, and at the same time in his favor as a member of the social group. This explains (1) the necessity for rationalizing punishment by measuring its severity, (2) the later emergence of the idea of forgiveness, and (3) the rise of the reformatory theory of punishment. The applicability of the reformatory theory in any given case depends upon the

instinctive reaction aroused by the offense, and not upon logical deduction from an abstract principle. The deterrent theory of punishment arises as a correct interpretation of the protective function of resentment. Its applicability is limited to offenders against whom resentment is felt. In behalf of the doctrine advocated in the paper, it is argued that it covers Westermarck's own cases better than his account, and that the researches of Sharp and Otto also tend to confirm it. Probably the deterrent theory is more popular to-day, but if reformatory methods shall prove more successful in actually diminishing crime, the reformatory theory will become the most adequate expression of human nature, since it will then be able to appeal to the fullest possible coordination of instincts.

Preliminary Report of the Committee on the "Introduction to Philosophy": BERNARD C. EWER.

In the absence of the chairman of the committee, the secretary of the Association reported briefly the work done. A questionnaire was sent to fifty teachers of philosophy, asking about methods, texts, etc. Replies were received from thirty-four. From these it appears that some doubt the utility of the course; that most regard it as a systematic statement of philosophical problems, and rely mainly on the history of philosophy for material; and that there is a comparative neglect of the synthesizing functions of philosophy as applied to the special sciences. The text preferred by a majority is that of Paulsen. A full report will appear later.

The Ethical Rationalism of Richard Cumberland: FRANK CHAPMAN SHARP.

Cumberland defines right action as action in conformity with the demands of reason. Reason is not regarded as a special faculty; it is merely a name for man's intellectual powers. The most fundamental law of the intellect is, avoid contradiction. Similarly moral truth, or rightness, consists in avoiding the self-contradictory in conduct. It involves a contradiction to choose (1) the less good in preference to the greater good of self, (2) the less good of self in preference to the greater good of another or others. Hence in content morality is "the endeavor to the utmost of our power of promoting the common good of the whole system of rational agents." If Cumberland's theory is supplemented by the doctrine of obligation first sketched by Butler and completed by Price, the result is a theory identical in every important point with that of Sidgwick.

The Social Standpoint in the Study of Religion: E. S. AMES.

There is an increasing tendency to introduce the social and genetic study of religion into college and university curricula.

1. Such a study emphasizes the fact that religion is native in

human experience, not in the sense of arising from a single instinct, but of being a later development within the social structure to which the instincts give rise.

2. A social study affords a perspective within which the different stages and types of religion may be placed and compared. These stages correspond to the general character of social organization and progress. If religion did not partake in some definite way of the ethical standards of different ages, it would be as impossible of scientific treatment as if it had no natural place in experience at all.

3. The social point of view furnishes a necessary setting and relation for various subjective, individual aspects of religion which have been dealt with at times in isolation; for example, the phenomena of conversion and mysticism.

4. Such a study of religion has certain educational qualities. It deals with live and concrete human problems, which are often vital and sometimes dominant in the personal experience of the students. There is good opportunity to cultivate the detection of the operation of custom and tradition in inhibiting more rational and vital methods of social control. Advanced college students are already familiar, in other fields, with the point of view of biological and social sciences, so that they are very soon able to make illuminating and constructive application of this standpoint in the study of religion. The social study of ethics has brought into new focus and alignment the questions of justice and truth and ultimate values. In the same way and by precisely the same readjustment, the social study of religion is beginning to afford materials and insight for a more adequate philosophy of religion.

The Empirical and Normative Method in the Study of Religion:

E. D. STARBUCK.

Two attitudes of mind have become fixed habits in science since the Baconian revival. One is that every science must be a diligent and industrious gatherer and organizer of facts. The other, equally important, is the habit of selecting facts according to their use and discarding the useless. This second lesson, as important as the first, has been difficult to learn. Science has had to supplant the evil habit of caring for facts as such. To succeed best a scientist must be guided by a refined sense of the worth-whileness of the thing he studies. No fact has any value except in relationship to the will, and all science is, therefore, without particularly distorting the term, essentially normative. The historic lesson is perhaps well enough learned to guide any future science into an attitude that is at the same time wilfully and purposefully both empirical and normative.

It is a noteworthy fact that the study of religion, which has been so long under the tutelage of theology and rationalistic philosophy

and has been dominated by the belief in a complete, once-for-all revelation, has been coming so rapidly into line with the prevailing conception of the true scientific method. Although the formation of an empirical science of religion is happily on the way, the work has only fairly begun. The following were suggested as some of the lines along which the study may be expected to develop and the methods it should employ:

A. An intimate and exhaustive study of individual cases. Instances in point are Royce's "Essay on John Bunyan" and Riley's "Study of John Smith." This is the most natural method of procedure and in many respects it is the most useful, in the interest not only of the study of religion as a science, but also with reference to its applied phases in the therapeutics of religion.

B. A comparative study of individuals in groups and of groups with each other. This will proceed by first-hand observation of religious phenomena and by the use of the questionnaire method. The study of religion must establish the equivalent of what in the exact sciences are called norms or averages. It is only in this way that one can estimate what is the central stream of religious consciousness and distinguish between normal and pathological experiences.

C. A combination of the first and second methods already suggested as employed, for example, by James in his "Varieties of Religious Experiences." These three methods must remain the right point of departure for the study of religion, since they are handling at first hand real facts. It is the recognition that the facts of religion, with their life-blood still warm within them, can be directly studied that has created a science of religion. This could never come about so long as the student of religion continued to depend upon second or even third-hand reports of savage beliefs and customs, and upon the crystallized expressions of the religious impulse, such as the sociologists and historians use.

D. The application of the psychophysical methods to the study of religion. It should have its own laboratory, or work in conjunction with one. Persons or groups of persons with like and different religious experience of a pronounced kind might well be studied exhaustively with reference to all their mental and physical reactions in order to discover the soil in which the variety of religious experiences flourishes.

E. The study of religion may confidently expect as much help from physiological psychology as comes to the psychologist proper. The point of approach will be, presumably, a knowledge of the nerve connections of the lower senses and particularly a knowledge of the sympathetic nervous system and its various connections, which seem to be the mechanism for controlling the immediate instinctive re-

sponses to outward situations, and the equivalent of these in the higher life of worth and value.

F. The pathology of religion. The study of religion may expect the same enrichment from an analysis of abnormal religious experiences that psychology has had from psychiatry.

G. The adaptation of the results of related sciences. Up to a decade or two ago the study of religion was under the tutelage of the other sciences entirely. It will continue to draw from these, but at the present time it has its own technique and its own subject-matter, and can stand upon its own feet.

JOINT SESSION WITH THE WESTERN PHILOSOPHICAL ASSOCIATION

Topic: Philosophical and Psychological Usages of the Terms Mind, Consciousness, and Soul.

J. R. ANGELL.

The term soul has generally been applied to the supposed spiritual essence of human personality which persists after death. As such it is connected with problems not soluble by ordinary empirical methods. Psychology as an empirical natural science has consequently ceased to use it as a familiar part of its terminology.

The term mind as meaning a durable psychic entity has also come to enjoy a highly precarious position. William James's defense of the "Thought of the Moment" as the only thinker needed in psychology is the classic expression of the passing of the old-fashioned conception of the mind. Mind as a term applicable to the entirety of mental phenomena, but not to a stable entity, continues to serve a useful function.

If concrete psychological events could be explained more effectively than otherwise by the hypothesis of a soul or a permanent mind, no doubt these terms and their corresponding concepts would still be actively represented in our literature. But this is not generally thought to be the case.

Signs are not wanting that the term consciousness itself is likewise in danger of extinction or at least essential modification. As a class name valuable for designating a group of phenomena presenting peculiar problems, it will presumably long remain with us. This will no doubt prove true despite the difficulty of defining it and despite the efforts of certain metaphysicians to reduce consciousness to one among other relations sustained to one another by objects. But there is unquestionably a widespread movement on foot in which interest is centered in the *results* of conscious processes, rather than in the *processes* themselves. This is peculiarly true in animal psychology; it is only less true in human psychology. In these cases

interest is in what may, for lack of a better term, be called "behavior"; and the analysis of consciousness is primarily justified by the light it throws on behavior, rather than *vice versa*.

If this movement should go forward, we should probably have a general science of behavior, recognizing two main subdivisions, physiological and psychical.

In any event this is a period in which sharp distinctions of one science from another are commonly regarded as both impracticable and unprofitable. With the movement in psychology over toward biological and physiological conceptions, it may reasonably be expected that the word consciousness will take on more marked dynamic and functional characteristics, so that even if the term persists, it will undergo material alteration in its implications.

B. H. BODE.

The realistic movement has contributed a variety of definitions of consciousness, the definitions here discussed being those which identify consciousness respectively with awareness or apprehension, with context or setting, and with the function of representation or meaning. The first of these is obliged to recognize two kinds of objects, viz., those which exist only when there is awareness—*e. g.*, pleasures and pains—and those which may exist apart from awareness. Hence it is obliged to postulate two different types of response on the part of the perceiving organism, the one being a condition of awareness only, while the other is a condition both of awareness and of those qualities or objects which exist only when there is awareness. This implication of the position finds no support in the present-day psychology of perception. The actual test between the kinds of objects is not this hypothetical difference in our responses, but in context or relationship. In applying this test, however, the realist confuses the distinction between fact and meaning or validity with the distinction between valid fact and validating experience. This same confusion occurs in the form of realism which discards awareness and finds in context or relationship the source of the differentiation between consciousness and object. It, therefore, has no advantage over the other theory. The assertion that consciousness is the function of meaning assumes a hard and fast distinction between sense-quality and meaning, which does not exist in fact. The view of instrumentalism, which has much to say for itself, is that consciousness is a name for the entities created by the psychologist in the furtherance of his particular purposes. It is not a distinct entity or function or relationship. The business of the psychologist is with the acts which constitute the course of experiencing.

G. A. TAWNEY.

The ancients were familiar with the facts that man may know his own knowing and that many men know the same things, consciousness. But they had no terms which regularly denoted these facts, and they knew no problem of consciousness such as ours. They were interested in the relation of the universal to the particular, of form to matter, both terms of the problem being for them aspects of existence. Christianity *et al.* laid emphasis on the soul and the heart with their motives, sins, and destiny. Like some of the ancients, it identified these with the man. Descartes distinguished thinking substance from extended substance, conceived minds as individual things related to each other and to other things, and used the new term consciousness to mean the mind's recognition of its own contents. The word consciousness already meant the knowledge by many minds of the same things. Descartes was chiefly responsible for the doctrine of the subjectivity of the sense-properties of things and for the distinction between the primary and secondary properties. Locke, and the early English psychologists generally, use consciousness to mean the mind's perception of its own processes. But they also tend to use it for these processes themselves. The empirical aspect of mind is identical with consciousness. Metaphysically, mind is something more than matter in motion. Thus, mind or consciousness is the *locus* of ideas, emotions, choices, etc., and is made up of these things themselves. Most of the central problems of modern philosophy grow out of this conception. Romanticism and especially the romantic philosophers, such as (*e. g.*) Kant, emphasized the independence and autonomy of "inner life" or "inner world," and modern psychology is, on the whole, the science of this "inner life," its relations to the body and the "external" world, its elements, and the laws of their compounding, etc. The terms "mental states," "states of consciousness," etc., do not alter the situation. The functional psychology defines function in terms of reflex sensori-motor process—an adjustment of the traditional conception of consciousness to the laws of biology and physiology. It still discusses the relation of mind to body and other problems growing out of the traditional conception of consciousness. It fails to lay a scientific foundation for logic, ethics, the philosophy of religions, and sociology, which deal with actual human experience and human beings rather than with that ideal construct called mind or consciousness. What is needed is a psychology of that kind of behavior which is marked by immediate value, selective repetition, and, to use words of much narrower connotation, intelligence and character. If we could return to the objectivity of the ancients it would be a distinct gain. Of recent attempts to revise the traditional conception of consciousness,

the paper gave special attention to Woodbridge's definition of consciousness as an order of relations.

E. H. LINDLEY.

The recent developments in the domains of animal behavior and of abnormal psychology have subjected the orthodox conceptions of consciousness to a severe stress.

The present trend toward a purely objective study of behavior (Thorndike, Judd) tends to eliminate consciousness and to substitute experience or intelligence, terms as yet equally vague.

The problem of the subconscious, often conceived crassly enough, is a real problem. The hypothesis of unconscious cerebration, on the other hand, carries a load already staggering. And inasmuch as we know less about the brain than about consciousness, the effort to banish all the difficulties of psychology to the limbo of unconsciousness seems little short of evasion.

Awareness as the criterion of consciousness is attacked from two radically different quarters. Dr. Morton Prince has shown that in a case of dual personality a somewhat elaborate computation was carried on without the awareness of the dominant personality of the moment. And Professor Titchener in his "Experimental Study of the Thought Processes" says: "I doubt if meaning need be necessarily conscious at all." And he describes a given recognition as "simply a recognition without consciousness." He and other writers insist that the *Aufgabe*, which determines the trend of consciousness in the solution of problems, may be unconscious. In short, the most essential factors in the composition of so-called conscious attitudes are themselves unconscious. In a word, consciousness and awareness are not coextensive. These cases from normal and from abnormal psychology emphasize the dilemma in which our science finds itself.

If psychology minimizes the conscious factor, if it subordinates the psychic to the physiological, does this not involve the surrender of the peculiar and unique task of psychology as distinguished from biology and physiology? Is it not the problem precisely of psychology to make the most of consciousness rather than to minimize it?

To conceive consciousness in terms of levels or forms and not as a point; to employ to the utmost the principle of gradation, so fruitful elsewhere; to examine exhaustively the evidence of the subconscious; to try out the hypothesis that the transition from neural to conscious is an elaborate series; to be stimulated by the new conceptions of energy, now developing in physics, to hope for a new and illuminating statement of the psychophysical relation; and to seek to conserve to the conscious end of the series all the distinguishing marks that truly belong thereto; to supply for the psychology of religion and

for abnormal psychology a theory of consciousness adequate to their needs—such constitute a portion of the urgent tasks of psychology.

BERNARD C. EWER,
Secretary.

NORTHWESTERN UNIVERSITY.

DISCUSSION

NOTE ON METHODS OF REFUTATION IN PHILOSOPHY

MATHEMATICAL rigidity and certainty in philosophical argument have been sought by perhaps all philosophers of note since the day of Socrates, though in varying measure. Only a few have believed that it has been found. Therefore, in reading Mr. Russell's article on "The Basis of Realism" in this JOURNAL,¹ any student of philosophy would be impressed by the tone with which the logician deals with the "idealist's" contentions. "Foolish fallacy," "elementary blunders" owing to "neglect of logic,"—such words from such a source suggest that the goal so long sought is within the sight of the giants of the newer logic. But experience may suggest caution in thus interpreting Mr. Russell's tone. Descartes and Spinoza believed that from the study of mathematics they had attained power to submit philosophical argument to mathematical standards of precision and certainty. Yet nowhere in my philosophical reading have I noted a fallacy apparently more glaring than the direct fallacy of accident in Spinoza's proof of Proposition XI. of the first part of his "Ethics" or the circular argument by Descartes in his "Meditations," wherein he proves God's reliability by the reliability of the natural light, and then the reliability of the latter by that of God.

An examination of Mr. Russell's arguments in the very sentences in which the forceful, hopeful phrases that I have quoted occur, seems to reveal a succession of logical derelictions which are very discouraging. Either Mr. Russell's logical studies are not so very helpful in philosophical discussion, or else his thought moves in a plane or dimension inaccessible to mine.

On page 160 it is asserted that the "idealist's" contention that we can not know that there are things we do not know rests upon the same "wrong analysis" of general propositions "which led Mill to regard Barbara as a *petitio principii*." Now perhaps an idealist *might* so rest his view. Whoever says he *did* should give name and page. Then Mill's analysis is rejected because, "when we know a

¹ Vol. VIII., No. 6.

general proposition, that does not require that we should know all or any instances of it. 'All the multiplication-sums that never have been and never will be thought of by any human being deal with numbers over 1,000,' is obviously a true proposition, although no instance of such a sum can ever be given." I do not defend Mill's analysis of Barbara. I would, however, point out that the major proposition of Barbara must be a general proposition of such a kind that in "S" an instance of the class "M" is given. Hence in citing a class of "general" propositions in which no instance can be given of the genus named in its subject, Mr. Russell appears guilty of *ignorantia elenchi*.

He goes on to argue, from the illustration of the "general" proposition already cited, that some propositions we do not know and of which no instance can be given, are propositions of whose existence we can know. But, in that illustration, these propositions must have for their subjects instances of sums of which (according to Mr. Russell and the argument) no instances can be given. And so they can not be named. A proposition of which no subject is or can be given or named seems to me a contradiction in terms.²

Finally, in the argument thus far the propositions we are said not to know have been known as to their genus but not as to their differentiae. Even if we grant that some things which are unknown in this specific way can be known to exist, it by no means follows that some things which are not known in any way, to which the category things can only be applied for convenience in expression, can be known to exist. Hence the very proposition which Mr. Russell cites to contradict the "idealist's" contention, that no things which we do not know can be known to exist, does not contradict that contention. Must we not debit Mr. Russell with a *converse fallacy of accident*.³

I have thought it justifiable to use so much space in this analysis partly because Mr. Russell is attacking not only idealists but philosophers generally. "Most current philosophical argument is fallacious," he says (p. 161). Perhaps if it were so I should not so quickly have been impressed by what seemed to me the peculiar character of Mr. Russell's arguments.

PERCY HUGHES.

LEHIGH UNIVERSITY.

² Of course the existence of the sums in question (whose existence, indeed, is not implied in affirming the proposition cited) has nothing to do with the existence of the propositions of which such sums might be the subjects if they could only be named.

³ It is as though one argued that because some people not Londoners are effete, therefore some people not Europeans are effete, which does contradict the assertion, No people not Europeans are effete.

REVIEWS AND ABSTRACTS OF LITERATURE

How We Think. Part I., The Problem of Training Thought. Part II., Logical Considerations. Part III., The Training of Thought. JOHN DEWEY. New York: D. C. Heath & Co. 1910. Pp. vi + 224.

On page 72 Mr. Dewey analyzes a complete act of thought into five steps, which may be condensed into three, thus: (1) a felt difficulty defined, (2) suggested solutions developed by reasoning, (3) experimental application of the suggestions. His book in its structure is an example—so far as printed matter can be—of one complete act of thought as so analyzed.

Part I. is the presentation and definition of the problem of training thought.

Part II. is the presentation and development of ideas which bear upon the problem.

Part III. indicates the concrete application of the ideas there developed to the training of thought.

Thus the feature of this book, as an exposition of the new logic, is, that it is what it declares true thought to be. In that respect it is unique. And that is the respect in which its author is eminent among those who are called pragmatists. Therefore I venture to say that this little "educational" book contains the heart of his philosophy. It contains it, moreover, in a form and language comprehensible to minds uncorrupted by philosophic scholarship.

For those to whom the observation and classification of thought is an end in itself, the most interesting parts of the book will be—

First, in Part I.: (a) The emphasis upon the specific nature of thought. "Thinking is not a case of spontaneous combustion; it does not occur just 'on general principles.' There is something specific which occasions and evokes it" (p. 12).

(b) The discussion of the relation of the psychological and the logical (Ch. 5). I quote a characteristic passage: "Logical, however, is used in a third sense which is at once more vital and more practical; to denote, namely, the systematic care, negative and positive, taken to safeguard reflection so that it may yield the best results under the given conditions. . . . No argument is needed to point out that the educator is concerned with the logical in its practical and vital sense. Argument is perhaps needed to show that the *intellectual* (as distinct from the *moral*) end of education is entirely and only the logical in this sense; namely, the formation of careful, alert, and thorough habits of thinking."

(c) A combination of (a) and (b) in these sentences: "The disciplined, or logically trained, mind . . . is the mind able to judge how far each of these steps needs to be carried in any particular situation. No cast-iron rules can be laid down. Each case has to be dealt with as it arises, on the basis of its importance and of the context in which it occurs. To take too much pains in one case is as foolish—as illogical—as to take too little in another" (p. 78). These quotations may be merely innocent pieces of advice to nervous teachers, and, as the publisher

fears, beneath our philosophic notice. But I doubt if they are so innocent as they appear.

Second, all of Part II., in which the author's original contribution to logical theory is more clearly set forth than anywhere else. I mention, somewhat at random but yet with reference to the special interests of the logician, four features of this part.

(a) The order of the chapters. Induction is the first thing mentioned. And with that we know that we are set free from the Holy Writ. Our logic is no longer to be a set of rules for a debating society, but an effort to understand the technique of sagacity and science. Surely that technique will not be generally understood until it is viewed and described as beginning with facts. But in the same sentence with induction, follows deduction; and we are introduced at the start to the "*double movement of reflection*," "back and forth between facts and meanings." I had the feeling that I rarely get from a logic book that we are here dealing with something that really happens. And the reflection recurred to my mind that this logic believes in itself. It tells you that thought starts with facts, and it starts with a fact.

After induction and deduction, *judgment*, which is a name for the act of explicit discrimination within that back-and-forth process, and for the conclusion of it—the final determination, that is, of the meaning of the facts given, which may abide in memory as a principle for future determination.

After judgment, *conception*, which is the highest and latest achievement of thought—the fixation of meanings themselves in *terms*, so that discrimination in the back-and-forth process may become still more explicit. Meanings become facts.

That is what has made all the trouble. To philosophers as such, meanings are the interesting facts, and that is why logic has been handed down to us back-end-foremost. It has been a science not of human thought, but of philosophic thought; and not of philosophic thought as it actually is, but as philosophers like to think it is. Philosophers do not acknowledge that *their* meanings, which they start with, are facts; they think they are ideas. And so they describe thought as the interrelating of ideas, with a short tail-piece or addendum granting that there is a kind of ignoble thought called induction which has doubtful relations with matters of fact. And it will always be difficult for philosophers to acknowledge that their meanings are facts, and their philosophies back-and-forth movements of thought from those facts to the ideas they suggest, because such acknowledgment requires the humility of a Christian and the courage of a sceptic.

(b) In each chapter we deal with the same process: inference, judgment, conception—names somewhat loosely and variously used in English for different aspects or parts of the back-and-forth movement of thought. Thus not only is the order of the parts of the old logic reversed, but the parts are merged together.

It is interesting that a theory which emphasizes the specific nature of every thought process, and a philosophy which absolutely capitulates to

variety, should have for its most characteristic contribution to future books a new unification, a resolution of various principles of explanation into one. But the paradox is only apparent, I believe, so long as that one is held—as it is here—to be only a higher generalization, based upon observation, and open to include whatever old distinctions are sustained or new ones discovered in the facts.

(c) The definition of an idea, as “a meaning that is tentatively entertained, formed, and used with reference to its fitness to decide a perplexing situation; a meaning used as a tool of judgment.” To that let me add this quotation: “Ideas are not then genuine ideas unless they are tools in a reflective examination which tends to solve a problem. Suppose it is a question of having the pupil grasp *the idea* of the sphericity of the earth. This is different from teaching him its sphericity *as a fact*. He may be shown (or reminded of) a ball or a globe, and be told that the earth is round like those things; he may then be made to repeat that statement day after day till the shape of the earth and the shape of the ball are welded together in his mind. But he has not thereby acquired any idea of the earth’s sphericity; at most, he has had a certain image of a sphere and has finally managed to image the earth after the analogy of his ball image. To grasp sphericity as an idea, the pupil must first have realized certain perplexities or confusing features in observed facts and have had the idea of spherical shape suggested to him as a possible way of accounting for the phenomena in question. Only by use as a method of interpreting data so as to give them fuller meaning does sphericity become a genuine idea. There may be a vivid image and no idea; or there may be a fleeting, obscure image and yet an idea, if that image performs the function of instigating and directing the observation and relation of facts.” The importance of this paragraph in logical method is as great as its importance in educational method. It makes psychology, or a consideration of mental *processes*, the basis of both these normative sciences.

(d) A final feature of this part—one that seems to need emphasis in this JOURNAL—is the discussion of the “theoretical, or strictly intellectual.” “The abstract thinker (the man of pure science, as he is sometimes called) deliberately abstracts from application in life; that is, he leaves practical uses out of account. This, however, is a merely negative statement. What remains when connections with use and application are excluded? *Evidently only what has to do with knowing considered as an end in itself.*” It ought to surprise some of the critics of this kind of logic to find that it allows that man of pure science to exist. It not only allows him to exist, but encourages him. “Interest in knowledge for the sake of knowledge, in thinking for the sake of the full play of thought, is necessary then to the *emancipation* of practical life—to make it rich and progressive.” And it even goes so far as to encourage us to emulate with moderation his example. “Every human being has both capabilities, and every individual will be more effective and happier if both powers are developed in easy and close interaction with each other.”

As to the question what knowledge for the sake of knowledge *is*, and

how distinguished from error—that is not explicitly answered. But perhaps we can frame an answer out of two statements. On page 138, speaking of thinking when it is employed merely as a means to more thinking, the author says: "To a theorist an idea is adequate and self-contained just because it engages and rewards thought." On page 142, speaking of an example of "theoretical" thinking, he says: "No overcoming of physical obstacles, no adjustment of external means to ends, is at stake. Curiosity, intellectual curiosity, is challenged by a seemingly anomalous occurrence; and thinking tries simply to account for an apparent exception in terms of recognized principles."

The answer to the question what "true thinking" is, when it is an end in itself, that I derive from those quotations and my own reflection upon the point of view of the book, is as follows:

True thinking is an inventory of actual facts for some reason attractive, facts as near bare of meaning as the naming of them allows; or it is the formulation of the relation of deliberately observed facts to established meanings—just for the fun of seeing how they fit; or it is the discovery of relations between established meanings. All those are isolated parts of the whole process of practical thinking. To them we must add that practical process itself when its specific predicament is a conflict of the intellectual taste of the thinker with his conceptual environment, and its outcome a reconciliation which has its truth in the satisfaction it gives him. If we ever found these four types pure of practical intention, and distinct from each other, we might get the pleasure of the first type by naming the first three *pure science—descriptive, explanatory, and mathematical-philosophic*—and the fourth, *philosophy proper*.

In Part III. we return, with wisdom, to the classroom, where the problem how to train thought arose. But the publishers will hardly expect us, as teachers of philosophy, to descend into these concrete applications of the theory.

To the book as a whole I have intended to give the highest praise in saying that it believes in itself. I wish to add, however, the observation that throughout my reading of it I felt every now and then, when I came to a word like *bridge*, or *relation*, or *connection*, or *organization*, *organized situation*, *coherence*, etc., that I was touching bottom so far as this book is concerned. I was harassed with the question, What is the difference between an organized and an unorganized situation? I think the book would be more clear, to those to whom it was especially addressed as well as to us, if that point were explicitly dealt with.

Perhaps that would only start us off, however, upon another of those "spiral movements of knowledge," to which justice is done, for the first time so far as I know, upon page 120, leading us astray among still other intellectual problems. There are plenty of loose ends in this logic—one of the most tantalizing to me being the question what a "meaning" is, when you get it away all by itself. The chapter on meaning, as indeed each of those theoretical chapters, wears very clearly the marks of an origination and not a concluding codification. It wears also the marks of origination in a mind loyal to things as they are. Its thesis does not

put it in fear of the facts. It is too full of specifcness and free pieces of wisdom to satisfy a regular scholar. And in this respect again it obeys its own moral, a moral which has little academic backing besides that of the author, but which I am by a happy chance able to reinforce with the authority of the great Christy Mathewson of the National League, speaking upon the all-important subject of "inside baseball." "Those who are too scientific," he says, "stick to the rules when the rules are no good—that is worse than no rules."

MAX EASTMAN.

COLUMBIA UNIVERSITY.

Theories of Knowledge. LESLIE J. WALKER. London: Longmans, Green, & Co. 1910. Pp. xxxix + 696.

The problem of knowledge is approached by Mr. Walker from three different angles, which are indicated by the titles of the three main divisions of his book, viz.: "The Psychological Analysis of Cognition," "The Metaphysical Conditions of Knowledge," and "The Epistemological Value of Cognition." Under each of these headings he presents an extended discussion of absolutism, pragmatism, and realism, the purpose being to show that of these three realism alone offers a tenable view. Realism, as he maintains, furnishes a "higher synthesis" which, by means of pertinent distinctions, reconciles antitheses and conserves what is true and significant in the other theories.

The realism which the author professes is asserted to be the realism of Aristotle and Thomas Aquinas. While he brings to his task a wide acquaintance with the literature of his subject and a commendable spirit of fairness, it is also evident that he is under the influence of a dualistic bias which, to all appearances, has not been subjected to any serious analysis and criticism. The subject-object relation, as he contends, is present, as an experienced element, in all our sense-perceptions. Perception ordinarily presents us with things, although, on occasion, the object of perception may be a sensation. "Sometimes we merely 'get a taste,' a *sensation* of bitterness or sweetness localized loosely in the mouth, or we feel hot from the effects of violent exercise or cold on account of a chill" (p. 49). Again, "Sensation may be perceived and located in the tips of the fingers, if we attend to *them* and not to the object touched. Even color may appear as a sensation when the eyes are almost closed and all variations in tone, tint, and outline are, as far as possible, eliminated" (p. 50). Barring these rather exceptional cases, however, it may be said that, while sensations are always the means by which we perceive (*id quo percipitur*), they are never the object of perception (*id quod percipitur*). The author frankly avows his adherence to what is commonly known as copyism. "Sensation is an effect produced in a sentient organism by an objective cause which it resembles; and that resemblance is not destroyed by the cooperation of the organism in the production of the effect" (p. 389).

The contention that sense-perception presents things and not conscious states may not seem particularly compatible with the view that

sensations bear a relation of resemblance or correspondence to the external agency which is their cause. This apparent incompatibility, however, is eliminated, in the opinion of the author, through the instrumentality of concepts or ideas, whose business it is to transcend the gap between sensation and object. Just how this is accomplished is not made very clear, nor is the reader made to feel at home after he has been safely transported to the world of substantial realities. The author discourses of substance and accident, of activity and passivity, of God as infinite and as existing *a se*, with a freedom which is quite bewildering and altogether unhampered by any constraints of reflective criticism (*cf.* Chapter XIII.).

This absence of self-criticism is presumably the reason why Mr. Walker's objections to absolutism and pragmatism are, on the whole, rather ineffective. The problem pressing for a solution is to bring into harmonious relation the sensuous and the conceptual contents presented in experience. If, for example, we grant Bradley's premises concerning the character of these contents—and the author does not explicitly deny them—it is no answer to his conclusions to appeal, *e. g.*, in connection with the discussion of time and change, to the fact that duration is real or that Bradley himself asserts the universe to be unity in difference. Neither is it pertinent to criticize pragmatism, unless it be recognized that the latter intends its doctrine as a challenge of the Bradleian premises, *i. e.*, unless we bear in mind that it offers a different interpretation of sensation and thought. If we first define sentiency in the manner of Bradley and the author, it is indeed true that pragmatism is unable to evolve thought from sentiency (p. 84), or that thinking is not reducible to "names and images." The author's loose way of treating sensations betokens a failure to get at the inwardness of the epistemological problem. To begin with, sensations are not clearly distinguished from perceptions. But apart from this, we are told in one connection that sensations are more or less adequate copies of their objective causes, while on another occasion it is stated that, "strictly speaking, sensations when functioning in a percept are not sensations at all, but merely nervous processes" (p. 51),—a "short and easy method" of eliminating a troublesome factor which might well excite the envy of T. H. Green. This seems to throw the burden of the problem upon the concept or idea; yet, with regard to the latter, the upshot of it all is that the idea is "a function of the mind by means of which, somehow or other, we apprehend the nature of objects; and its content, even though unconscious, functions in the mind whenever that idea is recalled, and so controls both association and assent" (p. 63).

It must be added, however, that Mr. Walker's book is serviceable, not only as a convenient summing up of current objections to absolutism and pragmatism, but as a kind of index to the more important utterances on these topics, and to divergences in doctrine and emphasis among leading thinkers. It is written in a clear style and is provided with a very useful index.

B. H. BODE.

JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. October, 1910.

Nel mondo del pensiero ellenico. Studi eraclitei (pp. 383-397): MARIO BRUSADELLI. — Heraclitus may be regarded as a connecting link in the history of Greek thought. To Xenophanes he owes the religious character of his philosophy; to Thales and the Ionian school, his doctrine of fire and his confusion of a philosophical with a scientific problem. He may be regarded as a precursor of the philosophy of becoming and of the philosophy of the "logos." *La teoria della causalità nel positivismo e nella scolastica* (pp. 398-414): E. CARONTI. — We can not analyze the conception of cause into constant conjunction, as positivists do; but we are bound to admit a true efficiency. *Da G. Duns Scotto a Kant* (pp. 415-430): SERAFINO BELMOND. — Duns Scotus is not, as has been believed, the Kant of the Middle Ages. He introduces a few modifications in the traditional theory of the genesis of concepts; but it must be admitted that his opposition to St. Thomas bears on points which, even in our day, are not yet settled. *La teoria della verità e della realtà nel prammatismo* (pp. 431-451): EMILIO CHIOCCHETTI. — An exposition of the pragmatic theories of truth and reality. *Le categorie di Aristotele* (pp. 452-466): AMBROGIO RIDOLFI. — Substance must not be made to stand over against the other nine categories: it is an element of them all. These nine categories possess entity only in so far as they participate of the category of substance. *Previsioni e predizioni* (pp. 467-479): C. F. SAVIO. — Just as physical phenomena are governed by laws which are the expression of present and future facts, whose cause exists in nature; so psychological phenomena may be at least partially explained by the experience of the past, the law of association, our subconscious life. *Note e discussioni. Cronaca scientifica. Tribuna libera. Analisi d'opere.* Elie de Cyon, *Dieu et science, Essais de psychologie des sciences*: A. GEMELLI. O. Zimmermann, *Gottesbedurfniss. Als Gottesbeweiss den Gebildeten dargelegt*: A. CLERICI. E. Formiggini-Santamaria, *La psicologia del fanciullo normale ed anormale con speciale riguardo alla educazione*: A. GEMELLI. Ritter Constantin, *Platon. Neue Untersuchungen über Platon*: A. M. Grabmann, *Die Geschichte der scholastischen Methode*: M. DE WULF. A. D. Sertillanges, *Saint Thomas d'Aquin*: L. BIANCHI. Mandonnet, *Des écrits authentiques de Saint Thomas d'Aquin*: CAN. MASNOVO. A. Daniels, *Quellen, Beiträge, und Untersuchungen zur Geschichte des Gottesbeweise im dreizehnten Jahrhundert*. G. Grumwald, *Geschichte der Gottesbeweise im Mittelalter bis zum Ausgang der Hochscholastik*. Baeumker, *Witelo, Ein Philosoph und Naturforscher des XIII Jahr.*: M. DE WULF. E. Vansteenbergh, *Le "De ignota litteratura" de Jean Weenck de Herrenberg contre Nicolas de Cuse*: A. PASSERINI. F. Tocco, *Studi Kantiani*: A. D. A. C. Haddon, *Lo studio dell' uomo*: A. GEMELLI. A. Brass, A. Gemelli, *L'origine dell' uomo e le falsificazioni di E. Haeckel*: P. PAOLI. A. Gemelli, *Cesare Lombroso*: G. FARAONI. *Note bibliografiche. Notiziario. Sommario ideologico delle opere e delle riviste di filosofia.*

REVUE DE MÉTAPHYSIQUE ET DE MORALE. November, 1910. *William James* (pp. 711-743): E. BOUTROUX. — An appreciative account of the life and works of William James. *L'espace et le temps des physiciens* (pp. 744-775): R. BERTHELOT. — The space and time of the physicist are not reducible to the space and time either of the mathematician or of the psychologist. *La logique de l'action* (pp. 776-794): J. M. BALDWIN. — An examination of the conditions and extent of affective implication. *Études critiques. Les fonctions mentales dans les sociétés inférieures* (pp. 795-822): P. LAPIE. *Questions pratiques. Le lien juridique*: E. LÉVY. *Tables des matières. Supplément.*

Abramowski, Edouard. L'analyse physiologique de la perception. *Collection de psychologie expérimentale et de métapsychie*. Paris: Bloud & Cie. Pp. 120.

Bajenoff and Ossipoff. La suggestion et ses limites. *Collection de psychologie expérimentale et de métapsychie*. Paris: Bloud & Cie. 1911. Pp. iv + 117.

Bohn, Georges. La nouvelle psychologie animale. Paris: Félix Alcan. 1911. Pp. ii + 200. 2 fr. 50.

Pädagogisch-psychologische Arbeiten. P. Schlager, Das Institut für experimentelle Pädagogik und Psychologie. Pp. i-xii. M. Brahn, Experimentelle Pädagogik. Pp. 1-16. Rud. Linder, Der erste Sprachunterricht Taubstummer auf Grund Statistischer, experimenteller und psychologischer Untersuchungen. Pp. 17-87. Frank N. Freeman, Untersuchungen über Aufmerksamkeitsumfang und die Zahlaufassung bei Kindern und Erwachsenen. Pp. 88-168. G. Deuchler, Ein Pendeltachistoskop. Pp. 169-178. Rud. Scholze, Neue Apparate für experimentelle Untersuchungen. Pp. 180-208. Leipzig: Alfred Hahns Verlag. 1910.

Pfungst, Oskar. Clever Hans: A Contribution to Experimental, Animal and Human Psychology. Translated from the German by Carl L. Rahn. New York: Henry Holt & Company. 1911. Pp. vii + 274. \$1.50.

Reininger, Robert. Philosophie des Erkennens. Leipzig: Johann Ambrosius Barth. 1911. Pp. iv + 464.

Taylor, Henry Osborn. The Mediæval Mind: A History of the Development of Thought and Emotion in the Middle Ages. Two volumes. London: Macmillan and Co. 1911. Pp. xv + 613, viii + 589. \$5.00.

Toulouse, Ed., et Piéron, H. Technique de psychologie expérimentale. Deuxième édition, entièrement refondue et très augmentée. Deux volumes. Paris: Octave Doin et Fils. 1911. Pp. 303 + 288. 10 fr.

Ufer, Christian. Grundlegung der Psychologie für Seminare und Frauenschulen. Leipzig: Quelle und Meyer. 1911. Pp. v + 169.

NOTES AND NEWS

At the meeting of the Aristotelian Society on March 6 the Honorable Bertrand Russell read a paper on "Knowledge by Acquaintance and Knowledge by Description." There are two sorts of knowledge of objects, namely, knowledge by acquaintance and knowledge by description. Of these it is only the former that brings the object itself before the mind. We have acquaintance with sense-data, with many universals, and possibly with ourselves, but not with physical objects of other minds. We have descriptive knowledge of an object when we know that it is *the* object having some property or properties with which we are acquainted; that is to say, when we know that the property or properties in question belong to one object and no more, we are said to have knowledge of that one object by description, whether or not we are acquainted with the object. Our knowledge of physical objects and of other minds is only knowledge by description, the descriptions involved being such as involve sense-data. All propositions intelligible to us, whether or not they primarily concern things only known to us by description, are composed wholly of constituents with which we are acquainted, for a constituent with which we are not acquainted is unintelligible to us. When a judgment is rightly analyzed, the objects which are constituents of it must all be objects with which the mind which is a constituent of it is acquainted. This conclusion forces us to analyze descriptive phrases occurring in propositions, and to say that the objects denoted by such phrases are not constituents of judgments in which such phrases occur (unless these objects are explicitly mentioned). This leads us to the view (recommended also on purely logical grounds) that when we say "the author of 'Marmion' was the author of 'Waverley,'" Scott himself is not a constituent of our judgment, and that the judgment can not be explained by saying that it affirms identity of denotation with diversity of connotation. It also, plainly, does not assert identity of meaning. Such judgments, therefore, can only be analyzed by breaking up the descriptive phrases, introducing a variable, and making propositional functions the ultimate subjects.—*The Athenæum*.

WE learn through the *Athenæum* that the first course of a new series of Hibbert lectures is being given by Dr. L. R. Farnell concurrently in London and Oxford, and should attract wide attention. His subject, "The Higher Aspects of Greek Religion," includes marriage, family life, and theories of divine punishment, and the development of the individual conscience. The first London lecture was delivered on April 25 in the University of London, South Kensington.

DURING the past month Professor Leonard T. Hobhouse, of the University of London, delivered a series of eight lectures at Columbia University on "Social Evolution and Political Theory."

THE third annual meeting of the Minnesota Psychological Conference was held on March 31 at the University of Minnesota.

THE Fourth International Congress of Philosophy was held at Bologna, April 6-11.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE SPIRIT OF CONSERVATISM IN THE LIGHT OF HISTORY

IT is a long, long time since human history began, when a species of apes, closely allied to the gorilla and chimpanzee of the African forests, found itself able to go on its hind legs without the assistance of its fore limbs, leaving these free to become ever more dexterous arms and hands. This new being, with his good, big brain case, found that his ability to do begat a tendency to use his advantages in novel ways. By casting bits of flint into the fire he perceived that they would crack into convenient pieces for cutting and scraping, and so he perhaps made his first tools. What manner of creature he was, still hairy or no, sleeping, mayhap, in trees like his congeners the apes of to-day, is a matter of conjecture. The veteran French archeologist Mortillet guessed that the earliest of the chipped stone tools found in the drift along river banks might be assigned to a time extending back 240,000 years.¹ Suppose we allow some two hundred and fifty thousand years back of that for the ancestors of paleolithic man, the makers of the so-called dawn stones (eoliths), and we arrive at the conclusion that man and his upright forerunners have lived on the earth for at least a half million years. I think that few versed in prehistoric archeology or in biology would feel inclined to reduce this period, although we have no way of determining it with any satisfactory degree of accuracy. Now to judge from the cavern remains, it would appear that no great progress was made except in the skill with which the flints were chipped, in the variety of their forms, and in the decoration of bone objects, until perhaps ten thousand years ago, when the so-called neolithic or ground stone period, with its pottery, its agriculture, and its rude dwellings, comes clearly in sight. It is the neolithic stage in which

¹ De Mortillet, G. et A., "La Préhistoire," Paris s. d. (1900), pp. 663 sq. Archeologists who are unconvinced that the so-called "eoliths" indicate human adaptations do not usually question the fact that man probably long used flint and shells before the fist-hatchet was elaborated.

the American aborigines remained until the arrival of Europeans in the late fifteenth century.

These facts about man's past have only recently been discovered and have not as yet so fundamentally revolutionized our thought as they should and will. Lyell's famous book on "The Antiquity of Man," which first brought home the truth to intelligent English readers, was published in 1863, the year that I was born. I venture to associate these two events, not on account of their parity in importance, but to emphasize the startling fact that it is only since my appearance on the earth that any considerable number of persons have even suspected the great age of the human species. It is true that Augustine found it necessary, in order to secure precedence for the Hebrew prophets, to refute the "lying vanity" of certain authors who maintained that the Egyptians had been carrying on their astronomical observations for no less than a hundred thousand years. How was this possible, he scornfully asks, when not six thousand years had elapsed since the creation of the first man?² This estimate of the great church father was somewhat reduced by an English prelate, Archbishop Usher, in the time of Cromwell. With laudable precision he assigned to Friday, October 28, 4004 B.C., the creation of all the terrestrial animals, the appearance of Adam, who, wholly inexperienced as he was, was called upon to devise a complete zoological nomenclature. Before the close of the day Eve was created to solace his loneliness, and the nuptials, duly performed, constituted the last act of the first working week.³ Although some thoughtful philosophers and theologians of the early church had expressed doubts as to the literal truth of this story, Archbishop Usher's exactness found favor in the eyes of Protestants in the seventeenth century, and it was left for Darwin, Lyell, Huxley, and the anthropologists fundamentally to readjust our historical perspective, not half a century since.

In order to understand the light which the discovery of the vast age of mankind casts on our present position, our relation to the past, our hopes for the future, let us borrow, with some modifications, an ingenious device for illustrating modern historical perspective.⁴ Let us imagine that the whole history of mankind were crowded into

² "De Civitate Dei," ed. Dombart (Teubner edition), lib. XVIII., cap. 40: "De Aegyptiorum mendacissima vanitate, quae antiquitati scientiae suae centum milia ascribit annorum."

³ "Annales veteris Testamenti a prima mundi origine deducti," London, 1651, p. 1.

⁴ One of Haeckel's students, Heinrich Schmidt, seems to have first hit upon this method of representing "cosmological perspective." See Lester F. Ward, "Pure Sociology," 1907, p. 38, note.

twelve hours, and that we are living at noon of the long human day. Let us, in the interest of moderation and convenient reckoning, assume that man has been upright and engaged in seeking out inventions for only two hundred and forty thousand years. Each hour on our clock will represent twenty thousand years, each minute three hundred and thirty-three and a third years. For over eleven and a half hours there is nothing to record. We know of no persons or events; we only infer that man was on the earth, for we find his stone tools, bits of his pottery, and some of his pictures of mammoths and bison. At twenty minutes before twelve do the earliest vestiges of Egyptian and Babylonian civilization begin to appear. The Greek literature, philosophy, and science, to which we owe so much, are not seven minutes old. At one minute before twelve Lord Bacon wrote his "Advancement of Learning," to which we shall recur presently, and not half a minute has elapsed since man first began to use the steam-engine to do his work for him. There is, I think, nothing delusive about this reduced scale of things. It is much easier for us to handle and speculate upon than the life-sized picture, which so transcends our experience that we can not grasp it.

Two reflections are obvious: In the first place, those whom we call the ancients—Thales, Pythagoras, Socrates, Plato, Aristotle, Hipparchus, Lucretius—are really our contemporaries. However remote they may have seemed on Archbishop Usher's plan of the past, they now belong to our own age. We have no reason whatever to suppose that their minds were better or worse than ours, except in point of knowledge, which has been accumulating since their day. In the second place, we are struck by the fact that man's progress was at first shockingly slow, well-nigh imperceptible for tens of thousands of years, but that it tends to increase in rapidity with an ever-accelerating tempo. Our forefathers, the drift men, may have satisfied themselves for a hundred thousand years with a single stone implement, the so-called *coup de poing*, or fist-hatchet, used, as Sir John Lubbock surmises, for as many purposes as a boy's jack-knife. In time they learned to make scrapers, borers, arrow heads, harpoon points and rude needles of flint and bone. But it was scarcely more than half an hour before twelve by our clock that they can be shown to have invented pottery and become the possessors of herds. The use of bronze and iron is much more recent. They still had a pious devotion to the venerable stone hatchet, which the priests appear to have continued to use to slay their victims after the metals began to be used.

The Greeks were the first of all peoples, so far as we know, to use their minds freely. They unquestionably demonstrated the capacity of our intellects in ethics, metaphysics, logic, and mathematics, but

the incalculable importance of the common things about them escaped them in the main. Aristotle seems to have conceived that all the practical arts had been discovered. He was willing that the slaves should be left to carry them on, while the philosophers reasoned on the ideals of a contemplative life, on the good, the true, and the beautiful. Doubtless some advance was suggested in what we should call applied science, especially at Alexandria, but conditions were unpropitious, and mankind had no better ways of meeting his practical needs in Roman times than he had before Aristotle summed up all the achievements of the preceding Greek thinkers. The great Christian fathers, Jerome, Augustine, Ambrose, if they did not think material things absolutely bad, at least had no interest in them.⁵ Their gaze was fixed on the relations of the soul to God. This transcended knowledge. Their contemporaries, the neo-Platonists, maintained that the highest truth came through intuition. Reason could reveal at best only unimportant matters. Both neo-Platonists and Christians were far more interested in miracles and various magical and sacramental methods of promoting man's heavenly interests than in a study of God's world. It was with this heritage that the Middle Ages began. A great part of what had been known in the fathers' time was forgotten. The text-books handed down a little Greek knowledge, half understood and mixed with incredible errors. The world was at best a sort of gigantic allegory. The minerals possessed moral and magical virtues, rather than chemical and physical. The alleged habits of the lion recalled the death and resurrection of Christ, and those of the wren illustrated our dependence on the past. With the rediscovery of Aristotle's works, which were prayerfully studied in the universities in the thirteenth century and elaborately explained and interpreted by the great Dominican friars Albert the Great and Thomas Aquinas, a new barrier was erected to the fruitful study of nature and the application of knowledge to man's material welfare. All of Aristotle's mistakes became sanctified as well as all of the mistakes of his new interpreters.

Roger Bacon, the first person, so far as we know, to express an unbounded confidence in the possibilities of experimental science and its usefulness, impatiently declared that it would be far better if all the works of Aristotle were destroyed than that the universities should be engaged in attempting to get at the sense of the bad Latin translations upon which they were dependent. Aristotle, he concedes, certainly knew a great deal, but at best he only planted the tree of knowledge, and it had still many branches to put forth.

⁵ Henry Osborn Taylor, "The Medieval Mind," 1911, Ch. IV.

"If we mortals could continue to live for countless centuries, we could never hope to reach full and complete knowledge of all that is to be known." Bacon held that the intelligent man of science should acquaint himself with the simple, homely things that farmers and old women know about. While in many ways the victim of his age, Roger Bacon, a little over six hundred years ago, gave first expression to the promise of man's happiness that lay in a study of plain material things. Experimental science,⁶ he prophesied, would enable men to move ships without rowers, carriages might be propelled at an incredible speed without animals to draw them, flying machines could be devised to navigate the air like birds, and bridges might be constructed ingeniously to span rivers without supports.⁷

These tentative suggestions came about two minutes before twelve. But a minute more was required before the expostulations of Roger Bacon were really heeded. The leaders of Protestantism had no heart in what we call progress. Luther decried reason as a "pretty harlot" who would blind us to the great truths God had revealed in the Bible. Melancthon reedited with enthusiastic approval an ancient astrology. Calvin declared man innately and unspeakably bad and corrupt, utterly incapable of essentially bettering himself. But Pomponazzi and Giordano Bruno and then Francis Bacon and Descartes, about one minute before twelve, began to batter down the great edifice which the scholastic doctors had reared from the blocks they had appropriated from Aristotle. They pleaded for reason and denounced the senseless respect for tradition. Descartes says, at the close of his immortal treatise on "The Method of Seeking Truth," that he is writing in his own native French instead of the Latin of his Jesuit instructors because he hopes to reach those who use their own good wits instead of relying on old books. A little earlier Lord Bacon published his wonderful "Advancement of Learning," also in his own mother tongue; and at the end of his life his "Novum Organon," in Latin. In both he deals with what he calls "the kingdom of man." Augustine knew only of a kingdom of God and a kingdom of the devil. Lord Bacon first popularizes in his varied and resourceful English the promises of experimental science. He says:

⁶ Perhaps the most striking presentation of Bacon's view is to be found in his following words: "Quia licet per tria sciamus, videlicet per auctoritatem, et rationem, et experientiam, tamen auctoritas non sapit nisi detur ejus ratio, nec dat intellectum sed credulitatem; credimus enim auctoritati, sed non propter eam intelligimus. Nec ratio potest scire an sophisma vel demonstratio, nisi conclusionem sciamus experiri per opera." "Compendium studii," Opera Inedita, ed. Brewer, p. 397.

⁷ "Epistola Fratris Rogerii Baconis de secretis operibus artis et naturae," *loc. cit.*, pp. 532 sqq.

Antiquity deserveth that reverence, that men should take a stand thereupon and discover what is the best way; but when the discovery is well taken, then to make progression. And to speak truly, *Antiquitas saeculi juvenus mundi*. These times are the ancient times, when the world is ancient, and not those which we account ancient *ordine retrogrado*, by a computation backward from ourselves. . . .

Another error that hath also some affinity with the former, is the conceit that of former opinions or sects after variety and examination the best hath still prevailed and suppressed the rest; so that if a man should begin the labor of a new search, he were but like to light upon something formerly rejected, and by rejection brought into oblivion: as if the multitude, or the wisest for the multitude's sake, were not ready to give passage rather to that which is superficial, than to that which is substantial and profound; for the truth is, that time seemeth to be of the nature of a river or stream, which carrieth down to us that which is light and blown up, and sinketh and drowneth that which is weighty and solid. . . .

Another error hath proceeded from too great a reverence and a kind of adoration of the mind and understanding of man; by means whereof, men have withdrawn themselves too much from the contemplation of nature, and the observations of experience, and have tumbled up and down in their own reason and conceits. Upon these intellectualists, which are notwithstanding commonly taken for the most sublime and divine philosophers, Heraclitus gave a just censure, saying, Men sought truth in their own little worlds and not in the great and common world; for they disdain to spell, and so by degrees to read in the volume of God's works. . . .

But the greatest error of all the rest is the mistaking or misplacing of the last or furthest end of knowledge. For men have entered into a desire of learning and knowledge, sometimes upon a natural curiosity and inquisitive appetite; sometimes to entertain their minds with variety and delight; sometimes for ornament and reputation; and sometimes to enable them to victory of wit and contradiction and most times for lucre and profession; and seldom sincerely to give a true account of their gift of reason, to the benefit and use of men; as if there were sought in knowledge a couch whereupon to rest a searching and restless spirit . . . or a shop for profit and sale; and not a rich storehouse for the glory of the Creator and the relief of man's estate.⁸

Bacon thus undermines reverence for the past by pointing out that it rests on a gross misapprehension. Living before us, the ancients could not be expected to be our peers in knowledge or experience. He would have the universities give up worshipping Aristotle and his commentators, cease tumbling up and down in their own metaphysical exaltations, and turn to the study of real things in the world about them. The reason for such study should be, first and foremost, the bright prospect of relieving man's estate. Like Sir Thomas More, Bacon wrote a Utopia, the "New Atlantis." The central feature of his ideal community was a sort of national academy of sciences, a Carnegie Institution, in which all sorts of experiments were carried on with a view to making discoveries which would better

⁸ "Advancement of Learning," Bk. I., Ch. V., sections 1-11, *passim*.

the people's lot. Bacon has often been reproached with making no real contributions to science.⁹ The criticism is probably just, but his rôle was that of a herald, as he himself recognized. He was the trumpeter who announced the dawn of our own day.

It was in 1605 that the "Advancement of Learning" was first published. And we may safely say that it is scarcely four centuries since the idea of the possibility of indefinite progress through man's own conscious efforts first clearly emerged in the minds of a very few thoughtful persons. Francis Bacon first popularized this great idea—the greatest single idea in the whole history of mankind in the vista of possibilities which it opens before us.

The idea of progress was essentially new. It could only develop in an obviously dynamic social environment and with the growth of historic perspective. The Greek thinkers did not have it in its modern form, so far as we can judge. It is true that Herodotus had a lively appreciation of the general debt of Greek civilization to the Egyptians, and Plato now and then refers to Egypt, but there is no clear comprehension of just what we call progress. Aristotle was keenly aware of the development of Greek philosophy since the Ionian philosophers, but there is nothing to indicate that he thought of mankind as going on indefinitely discovering new truth, and he had none of Lord Bacon's interest in seeing the results of natural science applied to the gradual amelioration of the general lot of mankind. Lucretius, the Epicurean philosopher of Cicero's time, doubtless reflecting earlier Greek speculations, guessed that there had been a stone age, a bronze age, and an iron age.¹⁰ But his was no philosophy of progress. Men might, it is true, understand the universe so far as to perceive that it was the result of a fortuitous concourse of atoms, limited in kinds and obeying certain fixed laws. But the chief significance of this lay in abolishing all fear of the gods and of death. He did not discover in his mechanistic universe any promise of steady human progress. Indeed, he thought that a degeneration was setting in which foreboded the complete dissolution of the universe as we know it. In short the Greek and Roman philosophers would have agreed with the medieval theologians in accepting the stationary character of the civilization with which they were familiar.

⁹ For example by Draper, in his "History of the Intellectual Development of Europe."

¹⁰ In the oft-quoted and remarkable lines:

Arma antiqua manus, ungues, dentesque fuerunt
Et lapides, et item sylvarum fragmina rami,
Posterior ferri vis est aerisque reperta;
Sed prior aeris erat quam ferri cognitus usus.

"De rerum natura," V., 1281 sqq.

Augustine and his disciple, Orosius, gave history a new background, and illustrated God's dealings with man, from the Garden of Eden to the sack of Rome by Alaric; but they knew little or nothing of man's long history and unconscious progress in the past, nor did they anticipate any future improvement, for to the ardent Christian no earthly betterment could compare with the overwhelming issue which awaited man after death, when every one entered into eternal and unchanging bliss or misery.¹¹ Accordingly, emulation consisted at best until the opening of the seventeenth century in striving to reach standards set by the past. The mere age of an institution or a belief came to be its surest sanction. The present might consider itself fortunate if it was at any point as good as the past. Only with Giordano Bruno and Lord Bacon did the strength of authority and tradition begin to be weakened, in spite of the hostility and consistent opposition of those who believed that they were defending God-given arrangements against the attacks of infidels, free-thinkers, and rationalists.

The process of weakening authority has been very rapid, considering its novel and fundamental character. It went on apace in the eighteenth century. Beccaria, the Italian jurist, who pleaded so eloquently for the revision of the horrible criminal law, foresaw that the conservatives would urge that the practises which he sought to abolish were ratified by a hoary past; he begged them to recollect that the past was after all only an immense sea of errors from which there emerged here and there an obscure truth.¹² During the early years of the French Revolution and under discouraging circumstances, Condorcet wrote his famous treatise on the indefinite perfectibility of man. In it he seeks to trace the steps which humanity has taken in the past toward truth and happiness. "Ces observations," he trusts, "sur ce que l'homme a été, sur ce qu'il est aujourd'hui, conduiront ensuite aux moyens d'assurer et d'accélérer les nouveaux progrès que sa nature lui permet d'espérer encore. Tel est le but de l'ouvrage que j'ai enterpris, et dont le résultat sera de montrer, par le raisonnement et par les faits, qu'il n'a été marqué aucun terme au perfectionnement des facultés humaines, que la perfectibilité de l'homme est réellement indéfinie; que les progrès de cette perfectibilité,

¹¹ This cursory treatment of a great theme, the origin of the idea of progress, may be supplemented by Laurent, "*Etudes sur l'histoire de l'humanité*," 1866, Ch. XII., pp. 63 sqq.; Flint, "*History of the Philosophy of History*," pp. 88 sqq.; and A. Grotenfelt, "*Geschichtliche Wertmasstäbe in der Geschichtsphilosophie bei Historikern und im Volksbewusstsein*," 1905, pp. 10 sqq. The latter is able to add little to what Laurent and Flint discovered.

¹² Beccaria, "*An Essay on Crimes and Punishments*," 1788, p. 113.

désormais indépendant de toute puissance qui voudrait arrêter, n'ont d'autre terme que la durée du globe où la nature nous a jetés." ¹³

These genial speculations tending to turn men's eyes toward the future rather than the past were tremendously reinforced by the scientific discoveries of the nineteenth century. These proved, first, that man was learning a great deal more than any one had ever known before about the world and his place in it. Secondly, he was applying his knowledge in such a way as to make older methods of manufacture and transportation and communication appear very crude and antiquated. Lastly, Darwin, Lyell, Boucher de Perthes, Huxley, G. de Mortillet, Haeckel, and the rest established the fact that man had long before historic times proved himself capable of the most startling progress. He had not only made his way from savagery to civilization, but from the estate of an animal to that of a man. Not only had his ancestors gone on all-fours and lived as the beasts of the field, but their remoter ancestors had mayhap lived in the sea and, as Darwin conjectures, resembled a so-called Ascidian larva, a tadpole-like creature not yet supplied with an unmistakable backbone. Roger Bacon, Francis Bacon, Descartes, Beccaria, Condorcet,—these and many like them had stoutly maintained that man could learn indefinitely more than any of his predecessors had known, and could better his estate indefinitely by the use of this knowledge and the desertion of ancient prejudices and habits. The nineteenth century proved conclusively that he had been learning and had been bettering himself for hundreds of thousands of years. But all this earlier progress had been *unconscious*. For the first time, close upon our own day, progress became an ideal consciously proclaimed and sought. So whatever the progress of man has been during the twelve hours which we assign to him since he became man, it was only at about one minute to twelve *that he came to wish to progress, and still more recently that he came to see that he can voluntarily progress, and that he has progressed*. This appears to me to be the most impressive fact that history reveals, and the most vital in the light that it casts on the conduct of life.

If it be conceded that what we rather vaguely and provisionally call social betterment is coming to be regarded by large numbers of thoughtful persons as the chief interest in this game of life, does not the supreme value of history lie for us to-day in the suggestions that it may give us of what may be called the technique of progress, and ought not those phases of the past especially to engross our attention which bear on this essential point? History has been regularly ap-

¹³ "Esquisse d'un tableau historique des progrès de l'esprit humain," 1797, p. 4.

pealed to substantiate the claims of the conservative, but has hitherto usually been neglected by the radical,¹⁴ or impatiently repudiated as the chosen weapon of his enemy. The radical has not yet perceived the overwhelming value to him of a real understanding of the past. It is his weapon by right, and he should snatch it from the hand of the conservative. It has received a far keener edge during the past century, and it is the chief end of this paper to indicate how it can be turned with the most decisive effect on the conservative.

So far as I know, no satisfactory analysis has ever been made of the conservative and radical temperaments. It is commonly assumed that every boy and girl is born into one or the other party, and doubtless as mere animals we differ greatly in our bravery, energy, and hopefulness. But nurture is now seen to be all that separates even the most uncompromising radical from a life far lower than that of any savage that exists on the earth at the present time. Even the recently extinct race of Tasmanians, still in a paleolithic stage of development, represented achievements which it took man long to accumulate. The really uneducated European could neither frame a sentence nor sharpen a stick with a shell. A great part, then, of all that goes to make up the conservative or radical may be deemed the result of education in the broadest sense of that term, including everything that he has got from associating since infancy with civilized companions. I think that the modern anthropologist and psychologist would agree on this point, and every one who allows his mind to play freely over the question must concede that a great part of what has been mistaken for *nature* is really *nurture*, direct and indirect, conscious or, more commonly, wholly unconscious.

Now it has been the constant objection urged by the conservative against a reform of which he disapproved that it involved a change of human nature. He has flattered himself that he knew the chief characteristics of humanity and that, since it was hopeless to alter any of these, a change which seemed to imply such an alteration was obviously impracticable. This argument was long ago met by Montaigne, who declared that one who viewed mother nature in her full majesty and luster might read so general and so constant a variety that any individual and even the whole kingdom in which he happened to live must seem but a pin's point in comparison.¹⁵ But there is a wholly new argument now available. Whether the zoologists are wholly right or no in denying the possibility of the hereditary transmission of acquired traits, there is no reason to think that

¹⁴ The Marxian socialist, of course, uses his version of the past in support of his plan of social amelioration.

¹⁵ "On Education," "Essays," Bk. I., Ch. XXV.-

one particle of culture ever gets into the blood of our human species; it all must be transmitted by imitation or inculcation or be lost, as Gabriel Tarde has made clear. We doubtless inherit the aptitudes of our parents, grandparents, and remoter ancestors; but any exercise that they may have made of the faculties which we share with them can not influence us except by example or emulation. *Those things that the radical would alter and the conservative defend are therefore not traits of human nature but artificial achievements of human nurture.* Accordingly, the anthropologist and historian can rule out this fundamental conservative appeal to human nature by showing that the most extraordinary variety has existed and still exists in the habits, institutions, and feelings of various groups of mankind; and the student familiar with the chief results of embryology will see that the conservative has constantly mistaken the artificially acquired and hereditarily non-transmissible for constant and unalterable elements in our native outfit. But, good heavens! if it has proved possible to alter an invertebrate tadpole-like creature living in the sea into an ape-like animal sleeping in a tree, and to transform the ape-like animal into an ingenious flint-chipping artist, able to paint pictures of bison and deer on the walls of a cave; and to derive from the flint-chipper of the stone age a Plato able to tell a most edifying tale about a cave full of conservatives, what becomes of the argument for the fixity of human nature in any important sense?

While it is then highly unscientific and unhistorical to consider the way in which men behave and feel at any particular time as exhibiting the normal and immutable principles of human nature, history and anthropology nevertheless concur in proving that each new generation is indebted to the previous generation for very nearly all that it is and has. This is true of even the most rapidly progressing societies, and there is reason to think that a group of mankind could live indefinitely adhering to an unchanged scheme of civilization so long as they were undisturbed and their environment remained constant. We have seen how very recently the idea that progress is possible has dawned upon a small portion of mankind. The alterations which any people can effect within a half century in its prevailing ideas and institutions and in the range and character of its generally diffused knowledge are necessarily slight when compared with the vast heritage which has gradually been accumulating during hundreds of thousands of years. In order to make the nature and variety of our abject dependence on the past clear, we have only to consider our language, our laws, our political and social institutions, our knowledge and education, our view of this world and the next,

our tastes and the means of gratifying them. On every hand the past dominates and controls us, commonly unconsciously and without protest on our part. We are in the main its willing adherents. The imagination of the most radically-minded can not transcend any great part of the ideas and customs transmitted to him. When once we grasp this truth we shall, according to our mood, humbly congratulate ourselves that, poor pigmies that we are, we are permitted to stand on the giant's shoulders and enjoy an outlook that would be quite hidden from us if we had to trust to our own short legs; or we may restfully chafe at our bonds and, like Prometheus, vainly strive to wrest ourselves from the rock of the past in our eagerness to bring relief to the suffering children of men.

Es erben sich Gesetz' und Rechte
Wie eine ew'ge Krankheit fort.

In any case, whether we bless or curse the past, we are inevitably its offspring, and it makes us its own long before we realize it. It is almost all that we can have. The most frantic of us are like a squirrel in his revolving cage.

There is no space here to discuss the general relation of history to the causes and technique of progress, but a word can be said of the effect which our modern outlook should have on our estimate of the conservative mood. Mr. John Morley has given an unpleasant but not inaccurate sketch of the conservative, "with his inexhaustible patience of abuses that only torment others; his apologetic word for beliefs that may not be so precisely true as one might wish, and institutions that are not altogether so useful as some might think possible; his cordiality towards progress and improvement in a general way, and his coldness or antipathy to each progressive proposal in particular; his pigmy hope that life will one day become somewhat better, punily shivering by the side of his gigantic conviction that it might well be infinitely worse." How numerous and how respectable is still the class to which this man belongs! It is made up of clergymen, lawyers, teachers, editors, and successful men of affairs. Doubtless some of them are nervous and apologetic, and try to find reasons to disguise their general opposition to change by taking credit for improvements to which they contribute nothing or by forwarding some minor changes which exhaust their powers of imagination and innovation. But how rarely does one of them fail, when he addresses the young, to utter some warning, some praise of the past, some discouragement to effort and the upward struggle! The conservative is a perfectly explicable and inevitable product of that long, long period before man woke up to the possibility of conscious betterment. He still justifies existing conditions and ideas by

the standards of the past rather than by those of the present or future. He neither vividly realizes how mightily things have advanced in times gone by, nor has he the imagination to see how easily they could be indefinitely bettered, if the temperament which he represents could cease to be cultivated.

Should the conservative be roused to defend himself, having been driven from the protection which his discredited conception of "human nature" formerly offered, he may ask peevishly, "What does progress mean, anyway?" But no one who realizes the relative barbarism of our whole civilization, which contains on a fair appraisal so little to cheer us except promises for the future, will have the patience to formulate any general definition of progress when the most bewildering opportunities for betterment summon us on every side. What can the conservative point to that is not susceptible of improvement?

There is one more solace, perhaps the last, for the hard-pressed conservative. He may heartily agree that much improvement has taken place and claim that he views with deep satisfaction all deliberate and decorous progress, and ascribe to himself the modest and perhaps ungrateful function of acting as a brake which prevents the chariot of progress from rushing headlong down a decline. But is there any reason to suppose that any brake is necessary? Have fiery radicals ever got possession of the reins and actually driven for a time at a break-neck speed? The conservative would find it extremely difficult to cite historic examples, but doubtless the Reign of Terror would occur to him as an instance. This certainly has more plausibility than any other alleged example in the whole recorded history of mankind. But Camille Desmoulins, one of its most amiable victims, threw the blame of the whole affair, with much sound reasoning, on the precious conservatives themselves. And I think that all scholars would agree that the incapable and traitorous Louis XVI. and his runaway nobles, supported by the threats of monarchs of Prussia and Austria, were at the bottom of the whole matter. In any case, as Desmoulins urges, the blood shed in the cause of liberty was as nothing to that spilt by kings and prelates in maintaining their dominion and satisfying their ambitions.¹⁶ We may, therefore, rule out this favorite instance of o'er-rapid change, and safely assume that so far the chariot of progress has always been toiling up a steep incline and that the restraining influence of the conservatives has been worse than useless. Maeterlinck exhorts us never to fear that we shall be drawn too far or too rapidly; and there is certainly nothing in the past or present to justify this fear. On the contrary,

¹⁶ "Vieux Cordelier," No. 3, December, 1793.

as he says, "There are men enough about us whose exclusive duty, whose precise mission, is to extinguish the fires that we kindle." "At every crossway on the road that leads to the future, each progressive spirit is opposed by a thousand men appointed to guard the past. Let us have no fear lest the fairest towers of former days be sufficiently defended. The least that the most timid among us can do is not to add to the immense dead-weight which nature drags along."

History, the whole history of man and of the organic universe, seems now to put the conservative arguments to shame. Indeed it seems to do more; it seems to justify the mystic confidence in the future suggested in Maeterlinck's "Our Social Duty." Perhaps, as he believes, an excess of radicalism is essential to the equilibrium of life. "Let us not say to ourselves," he urges, "that the best truth always lies in moderation, in the decent average. This would perhaps be so if the majority of men did not think on a much lower plane than is needful. That is why it behooves others to think and hope on a higher plane than seems reasonable. The average, the decent moderation of to-day, will be the least human of things to-morrow. At the time of the Spanish Inquisition, the opinion of good sense and of the just medium was certainly that people ought not to burn too large a number of heretics; extreme and unreasonable opinion obviously demanded that they should burn none at all." Here again we may turn to the past for its authenticating testimony. A society without slaves would have been almost incomprehensible to Plato and Aristotle. To the latter, slavery was an inevitable corollary of human society. To Innocent III. a church without graft was a hopeless ideal. To Richelieu a foreign service without bribery was a myth. To Beccaria a criminal procedure without torture and courts without corrupt judges were a dream. It would have seemed preposterous enough to Franklin to forecast a time when a Philadelphian could converse in his home with friends far beyond the Mississippi, or to assert that one day letters would be carried to all parts of the earth for so small a sum that even the poorest would not find the expense an obstacle to communication. But all these hopeless, preposterous dreams have come to pass, and that in a little more than a hundred years.

From these achievements the conservative has hitherto held himself aloof, whether from temperament, ignorance, or despair. Let us exonerate him. He did not know any better. He had not the wit to see that he was a vestige of a long, unenlightened epoch. But history would seem to show that this period of exemption from service is now at an end. It is plain that his theory that human nature

can not be altered is exploded, as well as his belief that a fractious world needs him to apply the brakes.

The conservative has, in short, been victimized by a misunderstood past. The radical has hitherto appealed to the future, but now he can confidently rest his case on past achievement and current success. He can point to what has been done, he can cite what is being done, he can perceive as never before what remains to be done and, lastly, he begins to see, as never before, how it will get done. It has been the chief business of this paper to suggest what has been done. If there were time I might try to show that progress in knowledge and its application for the alleviation of man's estate is more rapid now than ever before. But this scarcely needs formal proof; it is so obvious. A few years ago an eminent French litterateur, Brunetière, declared science bankrupt. This was on the eve of the discoveries in radioactivity which have opened up vistas of possible human readjustments if we could but learn to control and utilize the inexhaustible sources of power that lie within the atom. It was on the eve of the discovery of the functions of the white blood corpuscles, which clears the way for indefinite advance in medicine. Only a poor, discouraged man of letters could think for a moment that science was bankrupt. No one entitled to an opinion on the subject believes that we have made more than a beginning in penetrating the secrets of the organic and inorganic world.

In the fourth canto of the "Inferno" Dante describes the confines of hell. Here he heard sighs which made the eternal air to tremble. These came of the woe felt by multitudes, which were many and great, of infants and of women and men who, although they had lived guiltless lives, were condemned for being born before the true religion had been revealed. They lived without hope. But in the midst of the gloom he beheld a fire that conquered a hemisphere of darkness. Here, in a place open, luminous, and high, people with eyes slow and grave, of great authority in their looks, sat on the greensward, speaking seldom and with soft voices. These were the ancient philosophers, statesmen, military heroes, and men of letters. Neither sad nor glad, they held high discourse, heedless of the wails of infants, unconscious of the horrors of hell which boiled beneath them. They knew nothing of the mountain of purgatorial progress on the other side of the earth, which others were climbing, and heaven was forever inaccessible to them. And why should they regret it—were they not already in the only heaven they were fit for?

As for accomplishing the great reforms that demand our united efforts—the abolition of poverty and disease and war and the promotion of happy and rational lives—the task would seem hopeless enough were it not for the considerations which have been recalled

above. Until very recently the leaders of men have looked backwards for their standards and ideals. The intellectual ancestors of the conservative extend back in an unbroken line to the very beginning of human history. The reformer who appeals to the future is a recent upstart. He belongs to the last half-minute of our historical reckoning. His family is a new one, and its members have often seemed very black sheep to the good old family of conservatives who have found no names too terrible to apply to the Anthony Collinses, the Voltaires and Tom Paines, who now seem so innocent and commonplace in most of their teachings. But it is clear enough to-day that the conscious reformer who appeals to the future is the final product of a progressive order of things. While the conservative sullenly opposed what were in Roger Bacon's time called "suspicious novelties," and condemned changes either as wicked or impracticable, he was himself being gradually left behind in a process of insensible betterment in which he refused consciously to participate. Some mysterious unconscious impulse appears to be a concomitant of natural order. This impulse has always been unsettling the existing conditions and pushing forward, groping after something more elaborate and intricate than what already existed. This vital impulse, *élan vital*, as Bergson calls it, represents the inherent radicalism of nature herself. This power that makes for salutary readjustment, or righteousness in the broadest sense of the term, is no longer a conception confined to poets and dreamers, but must be reckoned with by the most exacting historian and the hardest-headed man of science. We are only just coming to realize that we can cooperate with this innate force of betterment which has so long been silently operating in spite of the respectable lethargy, indifference, and even protests of man himself, the most educable of all its creatures.

At last, perhaps, the long-sought sin against the Holy Ghost has been found; it may be the refusal to cooperate with the vital principle of betterment. History would seem, in short, to condemn the principle of conservatism as a hopeless and wicked anachronism.

If what has been said above is true, or any considerable part of it, is not almost our whole education at fault? We make no consistent effort to cultivate a progressive spirit in our boys and girls. They are not made to realize the responsibility that rests upon them—the exhilaration that comes from ever looking and pressing forward. They are still so largely nurtured upon the abstract and the classical that we scarcely dare yet to bring education into relation with life. The history they are taught brings few or none of the lessons it might. They are reared with too much respect for the past, too little confidence in the future. Does not education become in this

way a mighty barrier cast across the way of progress, rather than a guide-post to betterment? Would not those in charge of education tremble before the possibility of having the young realize fully what has been hinted in this paper? What would happen if the teachers in our schools and colleges, our theological seminaries and law schools should make it their business to emphasize the temporary and provisional character of the instruction that they offer, and urge the students to transcend it as fast as a progressive world enabled them to? The comical nature of such a suggestion shows how far we are still from any general realization and acceptance of the great lesson of history. It opens up a vista of discussion into which I have no desire to enter here, and I will bring this paper to an end by one more admonition. As Maeterlinck urges:

Let us think of the great invisible ship that carries our human destinies upon eternity. Like the vessels of our confined oceans, she has her sails and her ballast. The fear that she may pitch or roll on leaving the roadstead is no reason for increasing the weight of the ballast by stowing the fair white sails in the depths of the hold. They were not woven to moulder side by side with cobble-stones in the dark. Ballast exists everywhere; all the pebbles of the harbor, all the sand of the beach, will serve for that. But sails are rare and precious things; their place is not in the murk of the well, but amid the light of the tall masts, where they will collect the winds of space.

JAMES HARVEY ROBINSON.

COLUMBIA UNIVERSITY.

SOCIETIES

THE SIXTH ANNUAL MEETING OF THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

THE sixth annual meeting of the Southern Society for Philosophy and Psychology was held in affiliation with the Southern Educational Association at Chattanooga, Tennessee, on December 27 and 28. The program extended over four sessions, and there were twelve members of the Society in attendance. With but one exception the program was carried out as announced, and all the papers presented evoked a keen interest and profitable discussion. At the business meeting eleven new members were accepted into the Society. Only two reports were presented on philosophical themes, the others being in the nature of pure and applied psychology.

At the first session Professor Turner discussed the place of Locke in the history of thought, pointing out, after a careful analysis of Locke's doctrine, that he is imperfectly interpreted as the founder of sensationalism and the forerunner of Condillac. Locke does not,

in reality, advocate the passive mind, but is rather an empiricist who makes considerable use of intuitionism, and is thus more akin to Kant in his general position. The place usually accorded to Locke in our histories of thought should therefore more properly be given to Hobbes.

Professor Ogden reported informally on the probable significance of the Pythagorean philosophy in determining the sequence of names which designate the days of the week. These names are, of course, derived from the seven planets of antiquity. Pythagoras conceived these planets as circling about the earth in orbits which duplicate the relations of the seven notes of the musical scale. If one applies to the planets, thus conceived, the same method for determining their relations to each other which is applied in deriving the intervals of the scale, the order of the days is apparent. The sun, which occupies the median position in the system, with three planets beyond, and three planets between it and the earth, is analogous to the *Mese* or tonic of the Greek scale. The remaining order is determined by proceeding from this point alternately downwards and upwards, by intervals of four and five, respectively. This names the planets in the order which denotes the sequence of the days of the week.

The second session was held jointly with the child study department of the Southern Educational Association. Professor Hill spoke for the urgent need of medical inspection of school children and schoolhouses, and also advocated the establishment of state and municipal bureaus of research which should study all matters pertaining to child life, and cooperate with the work of the proposed federal bureau.

A. J. McKelway, for the Southern Educational Association, brought to the attention of the meeting a carefully digested statistical report as to the illiteracy of children in the southern cotton-mill villages, and urged the necessity of passing and enforcing laws for compulsory education and the prohibition of child labor.

Professor Ogden presented a paper in which he advocated greater emphasis on the expressive side of education, particularly oral and written. This he based upon experimental results which have led him to conclude that knowing is a process distinct from and independent of any direct mode of expression. Meaning is not necessarily given adequately in the expression, because of the fact that the mental antecedents are not usually in terms of images which permit of ready representation, but consist, rather, in "thoughts" in relation to which the particular nature of the expression is more or less a matter of indifference.

This session closed with the presidential address, which was delivered by Professor Buchner on the subject of "Learning and Forget-

ting." The speaker outlined the history of the problem of learning, and dilated on the vast importance to education of the modern conception made possible by the classic experiments of Ebbinghaus, supplemented by the point of view advanced by genetic and comparative psychology. Learning "seems to be a species of 'behavior' which mechanizes itself by the elimination of the useless as the organic scale is ascended. It is also a constant mode of psychophysical adjustment in which consciousness plays an increasingly important rôle."

The second day's sessions were opened by Dr. Dunlap's report on some investigations of rhythm which are under way in the Johns Hopkins psychological laboratory. After criticizing the so-called "attention wave" and "motor" theories for explaining the phenomena of rhythm, the speaker advanced the opinion that the perception of rhythm is essentially connected with the specious present, in that all members of the group are "present" in the observer's consciousness, and become simultaneously "past" when the group terminates. He also discussed some of the problems under investigation, together with the technique of the experimentation, apparatus, etc.

Dr. Shepherd was detained at the last moment, and his paper on "Imitation in Raccoons" was not received in time to be read.

Dr. Bailey presented for discussion the psychology of the American negro. He pointed out the almost entire lack of any reliable psychological data on the subject, and urged that the psychologist turn his attention to this matter in order that certain much-needed information may be supplied to those who are grappling with the social aspects of the negro problem.

The morning session concluded with a paper on the interpretation of dreams and visions by Mr. Williams. The speaker explained the essential likeness of dream states with certain morbid conditions of the waking consciousness. He opposed Freud's contention that a dream is always the gratification of an unfulfilled desire, and that it is not influenced to any degree by external stimuli. He also maintained that one dreams all the time, when asleep, though the substance of the dream is rapidly forgotten unless brought to mind by an associated idea.

The last session was opened by two reports presented by Professor Hill. In the first the results obtained in some class experiments on mirror drawing were discussed. It was concluded that this sort of test serves as a good introduction to, and illustration of, the learning process, but that it is not sufficiently standardized for demonstrating the transfer of skill acquired by special practise. In his second paper the speaker outlined the results of a comparative

study of children's ideals as obtained from a questionnaire answered by 1,431 children. Although subject to many difficulties of exact interpretation, the results agreed with similar studies in "attesting (a) diminution of acquaintance ideals with age; (b) increase of public characters as ideals with age; (c) predominance of acquaintance ideals with girls; (d) small number of ideals from fiction and also (e) from religion; (f) girls choose more ideals from the opposite sex than do boys."

Mr. Williams's paper on "Precocity" gave a detailed treatment of the methods employed and results achieved in the education of John Stuart Mill and the son of Boris Sidis. In his conclusions he maintained that "proper intellectual education inevitably leads to precocity," and that the prime factor in this is the maintenance of an affective disposition of satisfaction in performing the work prescribed. A set of rather definite rules of procedure were also laid down.

The sessions of the Society were brought to a close by Professor Barnes's report on the pressure curve in voluntary control. His experiments had to do with learning to move the ring finger voluntarily. Comparative results in the pressure curve of the two adjacent fingers were obtained by instructions to relax and to contract the muscles of these fingers. Automatism was acquired more rapidly by the subjects instructed to relax, than by those instructed to contract. The curve was at first irregular, but after inhibition was learned it remained practically constant, being more regular and less in extent for the subjects instructed to relax. "When the hand is supported, pressure seems to be an important element of the process of inhibition during the learning process, but gradually decreases in intensity as automatism is approached."

ROBERT MORRIS OGDEN,
Secretary.

UNIVERSITY OF TENNESSEE.

REVIEWS AND ABSTRACTS OF LITERATURE

A Text-book of Psychology. EDWARD BRADFORD TITCHENER. New York: The Macmillan Company. 1910. Pp. 565.

The present "Text-book" was prompted by the insistence of colleagues, pupils, and publisher that a book be written to take the place of the author's "Outline." The book aims to furnish an example of the "type of texts which emphasize the necessity of an experimental control of introspection, but which seek further to systematize the experimental data and to relate the psychology of the laboratory to that of the pre-experimental and non-experimental treatises."

As compared with the 350-page "Outline," the "Text-book" contains 565 pages, with 149 sections informally organized under general topic headings. Selected references for further reading, absent from the "Outline," are given after each section. The book contains 65 figures, chiefly of laboratory apparatus for the most part neither described nor referred to in the text.

The "Text-book" is not in any way a working over of the "Outline," but seems to be a totally fresh writing up of the fundamental principles of normal introspective psychology from the original point of view, a point of view which emphasizes, as did the "Outline," for the most part, the doctrine of elements and laws of connection, the process character of elements, the analysis of attributes (including clearness), the doctrine of parallelism, the two-level theory of attention, the elementary psychology of affection, the one-dimensional character of feeling, the method of introspection—a fairly consistent body of doctrine which has characterized all the writings of this author.

Yet the order of treatment follows, in a general way, the arrangement of chapters in the "Outline." The discussion of method is omitted because adequate treatment at the present stage is beyond the limit of a text-book. Since the "Text-book" is designed to replace the "Outline," it may be worth while to point out briefly the chief points of difference between the two.

An introductory section discusses the subject-matter, method, and problem of psychology, and adopts parallelism as a working hypothesis. The problem is conceived to be the discovery of mental elements and the laws of their combination. The method is declared to be that of introspection, but introspection in such a sense that "it is not so absurd as at first thought it seems, to say that we require the animal and society and the madman to introspect." Reference to the nervous system is made only for the sake of the "unity and coherence which a strictly descriptive psychology can not achieve."

In the section on sensation the emphasis is on the attributes, which are now quality, intensity, duration, and clearness, instead of the quality, intensity, duration, and extent of the "Outline." There are sensations for which the list is longer. "Vision and cutaneous pressure possess extent; hearing and smell are spaceless; the other cutaneous sensations, organic pressure and pains, and kinesthetic sensations, are endowed with the spatial attribute, although they play parts of varying importance in space perception."

Thirty-four pages are given to vision instead of the five of the "Outline." There is less effort to enumerate qualities for the mere sake of number, and Hering's theory is given prominence. Sound, taste, and smell come in for a clear discussion of 49 pages as compared with the 11 of the "Outline." There are separate sections for cutaneous, kinesthetic, and organic sensations, and for synesthesia. Organic sensations receive unusually complete and careful description and analysis. Less emphasis is placed on the numerical expression of Weber's law. Instead there is a more general discussion of the validity of units of mental measurement.

In the "Outline" the differences between sensation and affection were stressed. In the "Text-book" the emphasis falls on their common ancestry. "The writer holds that there is an elementary affective process, a feeling element, which in our minds is coordinate with sensation and distinguishable from it, but which is nevertheless akin to sensation and is derived from the same source, made out of the same kind of primitive mental material." Affection possesses the attributes of quality, intensity, and duration, but is distinguished from sensation by lack of clearness and by the presence of qualitative opposition. "The resemblance is so great that the two processes are evidently derived from a common mental ancestry; the difference is so great that we have no choice but to rank affection in human psychology as a second type of mental element distinct from sensation." The notion advanced in the "Outline" that the anabolic and katabolic bodily changes give rise to the affective processes is abandoned. The author hazards the guess that the peripheral organs of affection are the free afferent nerve endings not yet developed into specialized sense organs and that pleasantness and unpleasantness might have become sensations if mental development had only been carried further. This is an interesting leap of scientific imagination, and one is tempted to hope that since it has "lived long enough to be mentioned in a text-book," it will not "die and be dissected in the pages of psychological magazines" (see p. 49). The author warns the student, who is constantly being advised against speculation, that this theory of the bodily conditions of affection is simply a guess. Nevertheless four pages are devoted to it.

In the "Outline" attention was discussed as a process of reinforcement or inhibition of an excitation by the explosive discharges of cells in the frontal lobes. In the "Text-book" the situation is much modified. "Attention is identical with sensory clearness." The specific rhythmic reinforcement or inhibition by the frontal lobes as the physiological condition of attention is replaced by such general terms as cortical facilitation and inhibition, and further judgment is suspended until more is known of the physiological mechanism of these processes.

The two-level theory is deliberately expounded in the text, although hidden away in the references for further reading is the confession that the author "has fallen into the common psychological mistake of generalizing his own experience" (p. 302). The "consolation that the multi-level modes of attention were first observed" in the author's own laboratory seems hardly sufficient justification for concealing them from the student.

In place of the long and rather loosely organized chapter on perception and idea in the "Outline," we have here five excellently presented special sections on spatial, temporal, qualitative, and composite perceptions, and the psychology of perception.

Association receives shorter treatment, with less emphasis on formal classification and more on the analysis of the association consciousness. The section on memory and imagination stresses chiefly the introspective content of the memory and imaginative consciousness, and is character-

ized by the ever-present tendency to explain things by "cortical set," the assumption of which is said to outrun by far the experimental evidence.

The paragraphs subsumed under the general title "Action" discuss the reaction experiment in detail, the genesis and classification of action, and will, with a gratifying extension of analysis and introspection to the action consciousness, and with emphasis on the reaction as an end, rather than as a mere means of psychometry. This section seems, however, rather long drawn out, while the whole topic of instinct is dismissed in four paragraphs of fine print.

A conservative and trenchantly written section on emotion emphasizes the need for further introspective work. The section has for its core the exposition, criticism, and modification of the James-Lange theory. The modification points out the importance of affection as an elementary process attaching to simple perceptual material, and as the chief component in the emotion, which is defined as the affective reaction to a total situation. A brief discussion of the sentiments follows, replacing the long chapter on sentiment found in the "Outline."

The recent study of the higher thought processes is recognized in a section of 45 pages, dealing with such topics as conscious attitudes, cortical set, feelings of relation, determining tendencies, the reduction or decay of ideas and emotions, judgment, comparison and discrimination, the self, etc. Every teacher will appreciate the value of such a summary, though all may not agree that the subject is ready for incorporation in standard text-books. The book throughout gives one the impression that the author has great faith in the ultimate explanatory value of "unconscious cortical set" and the "universal law of mental growth and decay." And one senses a certain note of expectancy in the constant tentative introduction of the two ideas into every section dealing with the so-called higher mental processes.

Criticism, in such a review, must be largely confined to the book as a whole. To the structurally minded, whose introductory students are college juniors or seniors, the book will be at once welcome as a class text, and will easily supplant anything else in the field. But it seems to have been written for students much more mature than those for whom the "Outline" was adapted. To those for whom the biological point of view is a desideratum in an introduction to psychology, the text is, nevertheless, admirably suited for reference work; or, on the table of the instructor, it will afford a wholesome check on ultra-biological tendencies. The book will be especially valuable to the advanced student and to the young instructor for its honest attempt at complete systematic treatment, its insistence on verification, and the wealth of elementary fact contained in it.

The author's excuse for not including discussions of the nervous system and sense organs is that the student should get this knowledge from the physiologist, and that the psychologist needs all the time at his disposal for his own science. But a text-book should be adapted to present needs rather than to ideal conditions. As a matter of fact the ordinary student beginning the study of psychology has not yet been provided with

adequate neurological information, and the psychologist usually finds it necessary to devote some of his time to laying this most necessary foundation. A text-book designed for present needs should help the teacher minimize this time. To that end the reviewer feels that nothing would be lost and much gained by the inclusion of cuts of the sense organs, brain, and cord, and the nervous elements, even if the space required should necessitate the omission of such pictures as that of the horse hair and match, the horopter model, Exner's model and Koenig's difference tone apparatus. The mere inclusion of the cuts with simple lettering or brief description would undoubtedly increase the serviceableness of the book for a considerable number of teachers.

H. L. HOLLINGWORTH.

BARNARD COLLEGE, COLUMBIA UNIVERSITY.

The Reasoning Ability of Children of the Fourth, Fifth, and Sixth Grades. FREDERICK D. BONSER. *Columbia University Contributions to Education*, No. 37.

This monograph is by far the most thorough statistical study of the reasoning ability of children that has been published. The tests used were carefully chosen, care was exercised in giving the tests, the plans for grading the results were well carried out, while every approved method of manipulating the figures so as to show just what the data signify were used.

Tests I. and II. consisted of well-selected arithmetical problems involving reasoning ability with only slight mechanical use of figures. Test III. consisted of incomplete sentences and of sentences involving the use of one or the other of two words, such as "Days are longer (or shorter) in summer than in winter." Test IV. consisted of a number of shorter words whose opposites were to be written. Test V. consisted of a number of statements of reasons from which the children were to select those that seemed good. Test VI. consisted of a number of definitions of simple words from which the pupils were to select those that were good. Test VII. called for the writing of the meaning of two stanzas of poetry.

The children tested were 385 boys and 372 girls of the fourth, fifth, and sixth grades. The general conclusions as summarized by the author follow:

"1. In the progressive development shown in median ability through the grades tested, and in the high group correlations among these tests, it is evident that they are valid measures of several phases of that complex capacity we call reasoning ability.

"2. In the contrasts between grade progress and progress with age, in the generally superior showing made by the younger groups of children of any grade when contrasted with the older pupils of the grade, and in the fairly substantial percentage of pupils from lower grades found in the highest quartile of ability for all, it is shown that native capacity is measured to a high degree by the tests.

"3. In consideration of the rather varied range of information required, as well as the sagacity necessary to resolve the problems, all of the

foregoing differences between grade standings and age standings suggest that these tests are even better measures of intellectual capacity than are the usual factors determining the school grade in which the pupil is placed.

"4. In the general superiority of the boys over the girls in tests I. and II., III., and V., and of the girls over the boys in tests IV., VI., and VII., it is clear that there are real, measurable sex differences, small, to be sure, but no less real, among these more than seven hundred children.

"5. While the variability of the boys is slightly greater than that of the girls in some tests, in other tests the girls are more variable; so that, taken as a whole, the boys are only slightly more variable.

"6. The point of greatest pragmatic significance for the school lies in the implications from the two facts, first, that there are quite substantial percentages from both the lower grade groups and lower age groups who are found in the highest quartile of ability for all; second, that most of the groups of the youngest 25 per cent. in each grade show higher ability than the oldest 25 per cent. and sometimes higher than that of the median ability of the whole grade.

"The highest coefficients (of correlation), as shown by the averages, Table LVIII., are, in their order, that for tests III. and IV., the two forms of controlled association, completing sentences and the opposites, .53; that for tests IV. and V., the opposites and the selection of reasons in one of the tests in selective judgment, .49; that for tests V. and VI., the two tests in selective judgment, .47; and that for tests III. and VII., controlled association and interpretation of the poems, .45. By correction, these would probably all be raised to above .75, those for III. and each of the others approaching 1.00 very closely. Among the lowest of the average coefficients are those of tests III. and VI., controlled association and the second test in selective judgment, .24, and for tests VI. and VII., selective judgment and interpretation of the poems, .24. Relatively, the correlations with spelling are all low, the highest, .25, being with test VII., interpretation of the poems, next in order, .24, that with the mathematical tests, then .22 with III. and .21 with IV., the two forms of controlled association tests. The lowest coefficients for spelling are .09 with test VI., and .12 with test V., the two tests in selective judgment. The highest correlations for spelling are with those tests involving most the linguistic forms of ability, and with the mathematics tests, the lowest with those involving selective judgment. In these facts there may be food for reflection relative to the question of the disciplinary conception of education.

"The best test among those here used for this general ability is test IV., that of the opposites, the next that of the form of selective judgment in test V., and third, tests I.-II., the mathematics tests. The poorest is test VII., the interpretation of the poems.

"Children distributed on the basis of age show a correlation considerably higher than children distributed on the basis of school grade.

"Children extreme in ability, either in the direction of poorness or excellence, show higher correlation than the children of median ability.

"There is slightly higher correlation among boys than among girls in the abilities measured by these tests.

"The results here derived point to the conclusion that the correlations among the abilities here tested are a matter of native capacity rather than the result of training."

It is a matter for deep regret that such a thorough study, involving so many careful mathematical computations, should have been made before increasing the number of children tested in such a way that they would consist of a more typical group. Figures are given for ages from eight to sixteen, but the number of children of each age below ten and above thirteen and a half is too small to justify general conclusions as to changes in reasoning with age, especially when we realize that children of eight and sixteen who are in the grades tested are exceptional rather than normal children. Other studies have indicated, as does this, rhythms of increase in ability with age differing as to time for boys and girls; and if more children had been tested the results here given as to those rhythms might well serve as standards. As it is we are grateful to Dr. Bonser for devising these tests and for the high ideal he has set in the use of statistical methods; but we feel that some of the time spent in calculations was wasted and regret that the conclusions for other ages than from ten to thirteen and a half can not be accepted as reliable until further studies have been made.

E. A. KIRKPATRICK.

FITCHBURG, MASSACHUSETTS.

History of Medieval Philosophy. M. DE WULF. Third edition. Translated by P. COFFEY. Longmans, Green, & Co. 1909. Pp. xii + 519.

Interest in medieval philosophy, while largely developed through the neo-Thomistic movement in Belgium, England, and elsewhere, is by no means confined to this new-old stream of thought. M. de Wulf's book could not otherwise be now in its third French edition and also translated into English. As the second edition was extensively reviewed, we need call attention here only to the changes found in the third. "The relations between philosophy and theology down to the twelfth century have been reconsidered; also the realist and anti-realist systems of that century and the classification of the theological schools. The divisions of philosophy in the thirteenth century have been modified. A new section has been devoted to the neo-Platonic current of thought, represented mainly by Witelon and Theoderic of Freiburg." It is perhaps worthy of comment that the author gives not a little attention to the extra-philosophical setting of the great medieval systems. Scholastic methods of teaching are described lucidly. The philosophical literature accessible to the scholastics is pretty fully catalogued. And, in his account of the sources of the philosophical Renaissance, M. de Wulf incorporates an interesting page or two on the rise of the universities and the influence of the great mendicant orders on the intellectual life of the day. A criticism of M. de Wulf's interpretations on any of these or other points involves, of course, an evaluation of the whole orthodox Roman attitude—something quite uncalled for here. Waiving all the crucial questions this underlying one

involves, the reviewer finds the volume an admirable specimen of the historian's art. Immense learning and a keen sense of exposition are visible on every page. Cross-references have been worked out at great length, and bibliographies, while not presuming to be exhaustive, cover their respective fields thoroughly. The translator has done his work well. Quarrel as one may with this honestly and openly biased history, one must admit that it supplies information on an obscure, neglected, but rich field of philosophy as no other volume does.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

JOURNALS AND NEW BOOKS

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. November, 1910. *Morale thomiste et science des mœurs* (pp. 445-475): S. DEPLOIGE. - Modern sociologists have unconsciously come back to the Thomistic conception of morality. Their moral science + their rational art = the "scientia practica" of St. Thomas. *Métaphysique thomiste et critique de la connaissance* (pp. 476-509): PIERRE ROUSSELOT. - Like the "new philosophy," Thomistic metaphysics is above all a critique of the category of thing. *La morale et la sociologie* (pp. 510-542): F. PALHORIÈS. - The traditional system of morals rests upon empirical facts from which human reason, by a legitimate and logical process, ascends to the concept of obligation. The new morality, on the other hand, of which Lévy-Brühl is the best known representative, is antiscientific and antimoral. *La philosophie de Jaime Balmès* (pp. 543-572): JUAN ZARAGÜETA. - An exposition of the philosophy of the Spanish philosopher, Jaime Balmès. *Comptes rendus*. Leslie J. Walker, *Theories of Knowledge*. *Absolutism, Pragmatism, Realism*: FRANCIS AVELING. A. Lang, *Aphoristische Betrachtungen über das Kausalproblem*. *Grundlinien einer Theorie der Kausalität*: G. SIMONS. A. W. Benn, *The History of English Rationalism in the Nineteenth Century*: ED. JANSSENS. Joseph Fabre, *La pensée moderne*. *De Luther à Leibniz*: ED. JANSSENS. G. Gentile, *Giordano Bruno nella storia della cultura*: E. J. H. Höffding, *Histoire de la philosophie moderne*: J. LEMAIRE. B. Varisco, *I massimi problemi*: B. NARDI. René Gillouin, *Henri Bergson*. *Choix de textes avec étude du système philosophique*: C. MATHIEU. Paul Archambault, *Emile Boutroux*. *Choix de textes avec une étude de l'œuvre*: C. MATHIEU. Paul Gaultier, *La vraie éducation*: G. RYCKMANS. *Chronique philosophique*. *Sommaire idéologique des ouvrages et revues de philosophie*.

Brown, George. *Melanesians and Polynesians: their life-histories described and compared*. London: Macmillan and Co., Ltd. 1910. Pp. xv + 451. 12s.

Hodgson, Shadworth H. *Some Cardinal Points in Knowledge*. (From *Proceedings of the British Academy*, Vol. V.) London: Henry Frowde, Oxford University Press. 1911. Pp. 61.

NOTES AND NEWS

At the meeting of the Aristotelian Society on April 3 Mr. H. W. Carr read a paper on "The Theory of Psychophysical Parallelism as a Working Hypothesis in Psychology." The nature of the relation of mind and body is a metaphysical problem, but the method and scope of psychology depend on the formulation of the problem. The hypothesis most generally adopted in psychology is that mental phenomena form an independent series concomitant with a series of physical changes in the matter of the brain, and that there is a point-to-point correspondence between the two series. The hypothesis was considered as a possible description of fact apart from any metaphysical explanation, and it was held that it involves a direct logical contradiction from whatever point of view it is considered. To an idealist it is impossible, because for idealism there is no independent physical thing to run parallel with the mental existence; and to a realist it is equally impossible, because the independent reality which realism regards as essential to perception is not the physical movement in the brain.—*The Athenæum*.

THE Committee of the American Philosophical Association on Early American Philosophers reports that the Columbia University Press will issue this year a reprint of President Samuel Johnson's "Elements of Philosophy," under the editorship of Professor F. J. E. Woodbridge; that the Princeton University Press will issue also this year a uniform reprint of President John Witherspoon's "Lectures on Moral Philosophy," under the editorship of Professor V. L. Collins; and that the Publication Committee of the University of Pennsylvania has approved the reprinting of Dr. Benjamin Rush's "Diseases of the Mind."

THE New York Branch of the American Psychological Association met on April 24 in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences. The program included two sessions, one in the afternoon at Columbia University and one in the evening at the American Museum of Natural History. The members dined at the Faculty Club of Columbia University. A fuller notice of this meeting will appear in a later number of the JOURNAL.

THE Walter Channing Cabot fellowship, which has just been awarded to Professor Josiah Royce, is supported by a fund of \$50,000, given to Harvard University in 1905 to provide "an additional remuneration to some distinguished man in recognition of his eminence."

IT is reported that Trinity College has given Cambridge University the sum of £1,000 to be used toward the erection of buildings for physiology and for experimental psychology.

LONGMANS will publish this month "Some Problems in Philosophy: being an Uncompleted Introduction to Philosophy," by William James.

PART I. (two volumes) of the third edition of "The Golden Bough" has been issued by Macmillan and Co.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE LOGIC OF ANTITHESIS

THE antithesis, such as life and death, finite and infinite, reality and unreality, one and many, plenum and vacuum, internal and external, cold and hot, pleasure and pain, or good and evil, is a peculiarly interesting form of negation. In many cases of antithesis, it is true, both the terms are positive at least in form. In meaning, however, each is a negative of the other. The logic of antithesis, then, must afford an interesting chapter in the general logic of negation and, if antithesis may be defined as extreme difference, then also in the logic of difference.

The subject of antithesis is, of course, a very old one. Also it has received many treatments, as might be expected. Still, whatever may have been said or done in the past, a new statement or a rewording always has some chance of proving worth while. Accordingly, without making claim to a serviceable originality and without even feeling any certainty of such originality, I would venture in the following six paragraphs to indicate some principles of all antithesis that seem very important to me, making thus what the scientists call, and what may be, only a preliminary report. The principles are these:

1. *Mutual Reproduction*.—The terms of any antithesis can not but be relative. This is no less true of finite and infinite, real and unreal, plenum and vacuum, than it is of cold and hot or good and evil. Indeed in the case of finite and infinite, if not in those other cases, the relativity is a very old story. But, each term being relative, neither can be without the character of the other. The relative is always the mixed. Wherefore the terms of an antithesis reproduce each other; and, emphatically, this is not to say that each implies the other only by contrast. What it says is, again, that each has in its own right or in its own nature the character of the other. In fact the reproduction must be seen as not only of each term by the other, but also in its entirety as of the antithesis itself by each term. Each term has that within itself whereby, as if internally, it harbors

the very antithesis as a whole of which, externally, it is only one member.

2. *Duplicity of Meaning.*—Since the terms of any antithesis are thus reproductive, each reproducing the other and so harboring within itself both itself and its opposite, they must always have double meanings. The antithesis and the reproduction make this duplicity absolutely necessary, for where each is on both sides each must get, besides its first meaning, the one-sided meaning, a second meaning that is adequate to the both-sidedness. The opposition of life and death affords a simple but not at all peculiar or exceptional illustration. Here the distinction is a reproductive and so transposable one, but only if the terms after transposition have new meanings. Briefly to indicate the new meanings, there are the life that is simply before death or is the mere absence of death and the life that is superior to death; there are, on the other hand, the death that is only the cessation of life and the death—how shall I express myself, not being either theologian or biologist?—that belongs even to life itself, not merely to its cessation, if the life be not superior to death. And, as of life and death, so of knowledge and ignorance, rest and motion, reality and unreality, external and internal, and so on. Also, in general, the duplicity, now so evident, plainly must always have this form: a local, narrow, one-sided meaning, to begin with, and then a meaning big and deep enough to take both sides up into itself. Wherefore we may conclude that involved in any antithesis there is more than just the opposition of two terms or even than the possible transposition of those terms. There is also, as the warp in the woof, the important tension of part and whole, the peculiar opposition of the particular and the general; and, if this, then, as a result at once of the opposition, the transposition, and the insistent wholeness, in the very duplicity there is involved a difference of quality. A whole is not merely more than any of its parts; it is different.

3. *Identity of the Opposites.*—What this identity means, not to say also what it does not mean, is fairly clear from what has been said. With the reproduction and the double meaning it is easy to see why, and in particular how, opposites can be declared identical; why and how paradoxes so often go with insight. The identity is indeed very far from being a superficial one; superficially there appears anything but identity; and one who can never see or think beneath the surface will find in paradoxes only verbal gymnastics or formally logical subtleties; but opposites are identical, being so, again, through their mutual reproduction and, above all, through the two meanings of each, one meaning being indeed always exclusive, but the other free and hospitable. And because of the two meanings, the

identity of opposites must always indicate a becoming, for that identity necessarily connects the two meanings, marking a change in the case of each term from one meaning to the other. No wonder that Heraclitus has always been a hard man to understand with his becoming, his paradoxes, and his hidden but very certain double meanings for all his terms! As for the becoming, too, of course it can not refer to any mere flat reconciliation of the antithesis, but also it can not refer even to a mere inversion and, except for quantitative changes, literal repetition of the antithesis; on the contrary, it must involve, in the first place, instead of reconciliation, a great sharpening of the antithesis and, in the second place, instead of repeating the antithesis merely in larger terms or on a larger scale, it must take the antithesis into a new region, new not for size alone, but for the difference of quality which has been pointed out. In short, the becoming which the identity of opposites necessarily indicates is in general nothing less than the persistence of all the antitheses of life or of reality, *but always with a real change of meaning or quality for the antithetical terms*. In any antithesis, let me say, risking perhaps useless repetition, each term has two meanings, one small and obvious, the other big and hidden, and the big and hidden meaning, because it comprehends the things that are opposed, is more than just big; it is different; so that the identity of opposites means only a becoming that brings generalization, qualitative variation, and renewed opposition. *Were there becoming on any other plan, could reality change and yet be also conserved?*

4. *Serial Mediation*.—Doubtless to ordinary thought an antithesis signifies two terms that are in what I will call a single, ungraded, cataclysmic difference, meaning of course a difference of complete exclusion, a difference under which neither term has any contacts, or any dealings, with the other. Metaphysical dualism as representing the antithesis of the material and the spiritual or immaterial is doubtless the most notable instance of such thinking. The principles of reproduction, however, of duplicity, and of identity show conclusively how inadequate any such cataclysmic difference must be to any real antithesis. In dualism or in any other antithesis the opposed terms can no more truly have a cataclysmic difference than in the familiar case of day and night. Those principles call irrevocably for mediation through an infinite series. They make the antithesis seem only such a series short-circuited. Has not each term in its own character, in its own meanings, a "one-to-one" or "part-for-part" correspondence with the antithesis, let me say the differential antithesis, as a whole, to which it belongs as a part, and can anything but an infinite series satisfy the reproductiveness which such a correspondence must always imply? Again, where the oppo-

sites are identical through their duplicity, can anything but the infinitely serial functional relation of the two things be adequate to their peculiar entanglement? The functional series, it is true, outwardly shows merely the orderly and parallel, parallel and orderly movement of two terms, say, in the typical case, of one term from zero to infinity, of the other from infinity to zero; but the logic of any such function is larger or deeper than the mere outward quantitative form is likely to suggest. Thus, besides the quantitative form, there is the infinity, with its peculiar innuendo of qualitative difference, and there are also, not less peculiar or significant in their innuendo, the *inverse* relation of the serial approximations to zero or to infinity of the different terms, and the persistent differential, constituting a controlling principle or law, by which the series proceeds. So, emphatically, the terms of an antithesis are not in a cataclysmic difference. Their difference is serial; they have a serial mediation; and, if one remember both warp and woof, the mediation is not more of the opposite terms than of the different meanings. Moreover, as to this mediation, in a sense which I hope to make clear and which at the same time will prevent the too easy misunderstanding of the word itself, instead of reducing the difference the serial mediation intensifies it, making it truly extreme. Thus, just because the difference is so graded, it must constitute or realize what might be called an unchecked and cumulative differentiation, and must therefore, as was said, make the difference or the antithesis extreme as no single cataclysmic instance could possibly do. Think of the immeasurable excess of the sum of all possible cases over just one last case of any difference. Here, once more, the familiar but wholly typical antithesis of life and death may be used in illustration. Let death be cataclysmic, and its opposition to life is really of comparatively little import; but let there be a serial difference or a serial mediation between them, let there be such a thing as either dying or living, let neither ever be unmixed, that is, unaccompanied at any time by the other, and the opposition or antithesis is supreme, made so—no other word could be more expressive or more pertinent—by the very immanence of each term in the other. To be always dying even while one lives is no ordinary death. To be always living even while one dies is no ordinary life. And, as of life and death, so, *mutatis mutandis*, of good and evil, motion and rest, plenum and vacuum. The logic that lies back of the series would thus seem to suggest that in some way true opposites must be not merely reproductive, nor yet only double in meaning and so identical, but also, as if to make the intimacy as close as possible, mutually immanent. The serial mediation, to say the least, shows them immanent in the sense of being, not indeed structurally, but functionally identical.

5. *Difference at Once in Kind and Degree.*—Here little can be added to what has been said already. Frequently, however, difference in degree is treated as no real difference, gradation and continuity being falsely taken as synonymous, and it is, accordingly, well in this separate paragraph to give emphasis to what is certainly the consistent and logical view, namely, that gradation must always mean real difference, the realest sort of difference. Gradation is always some difference functionally expressed, and this, involving two terms, can hardly signify continuity. A continuous series, where the series is a function—and any other series seems meaningless—is a self-contradiction. The functional series, too, may have unity, but not of the sort that continuity usually denotes. Where there is difference in degree, there is supreme difference in kind, although at the same time there is the real unity of the functional relation.

But such confident association of difference in kind with difference in degree, and the previous suggestion of immanence as expressive of the relation between things quite antithetical, or of serial mediation as sharpening an antithesis even while it connects the things opposed, certainly do call for explanation along other lines than those which have so far been followed. However cogent and imperative the logic so far presented here may have been, there is still a sense of something not yet said. All that has been said may be quite true of difference or of antithesis, but the question remains: What else is true? What, if anything, will make the foregoing as intelligible as it seems logical? In the next paragraph at least a partial answer to this question will, I think, be found.

6. *Dimensional Difference.*—The fact that difference, especially as expressed in antitheses, may be dimensional, may not be the key, but I believe it to be a very important notch in the key that will unlock the remaining mysteries of antithesis or of difference in general. Indeed, as seems to me, what has been said so far in this paper, especially in the last two numbered paragraphs, virtually has been an indication of dimensional character or rather, more exactly, of the peculiar relation that one dimension bears to another. In other words, any antithesis, having two terms, would seem to be also two-dimensional. Slightly to reword what has been said, the terms of any antithesis imply qualitative difference; being “identical” or “immanent,” although different, they are necessarily mutually implicative or general to each other; and a functional series expresses at once their unity and their difference. Just these things, however, constitute what seem to me to be the essential conditions of a two-dimensional region. Thus, to take the simplest and most direct illustration available, length and breadth are certainly internal implications of each other, and their difference very plainly involves some-

thing besides a quantitative distinction. All dimensional differences, not merely that of length and breadth, are qualitative. Of course as differences of direction they are quantitatively measurable; so are the differences of distance in either of their particular directions; but the former differences distinctly are not of the same sort or kind as the latter. Also the quantitative variations within any given direction or dimension may be functionally related with those of any other direction or dimension, or quantitative differences of direction or dimension, that is, angular differences, may be functionally related with the differences within any direction or dimension; but in all cases a functional relation involves more than mere quantitative difference. In a word, therefore, the spatial dimensions, length and breadth, or, let me say, the spatial dimensions in general, whatever their names or whatever their number, being characteristically the terms of functions, are qualitatively rather than quantitatively different; and space itself as dimensional, whether two-dimensional or *n*-dimensional, is no mere mass or quantum, but is a proper medium, or, if you please, a proper container, of things at once quantitatively variant, qualitatively different, and functionally related. By the kind ordering of providence or by the pleasant accidents of nature, the multi-dimensional character of space seems eminently suited, I can not quite say, to a pluralistic universe, but to a universe that is big with more than just one sort of thing, to a universe that is qualitatively plural.¹ It is suited, too, to a universe whose differ-

¹ This is hardly the place, nor am I competent, for a critical discussion of space in general or of the Euclidean space in particular. The above references to space and its dimensions have been rather boldly made for purposes of needed illustration of the dimensional difference which I seem to see in any antithesis. The terms of any antithesis are qualitatively different and yet functionally related; so are the dimensions of space; and doubtless with such an analogy between the two I should be content. In this note, however, I have to go a little farther with my layman's account of dimensional space. Thus, it has seemed to me as if the Euclidean space with its three rectangular dimensions might be spoken of as the logical whole in extension. Thus, no science being so hospitable to hypothesis as mathematics, I would hypothesize that the right angle is the spatial representative of any distinct difference in kind; and on this hypothesis I would venture to say that any single difference is two-dimensional, but that a multiplicity of differences, that is, of different differences, in short a general plurality, must be three-dimensional. Logically, it should be remembered, the third dimension is not just one dimension among others; it is third, and is, accordingly, a dimensional variant or a differential compounding of the region already defined by the first and second. Moreover, add a fourth dimension and, at least on the rectangular hypothesis, the resulting region, if it may still be so called, will spring from an involution or an intensification of the extensive three-dimensional region already defined. Beyond the third dimension, the dimensional variation or increases can be seen only as giving matter or content to Euclid's merely geometrical solidity. Indeed, if now I be not too fantastic, it even seems

ences are antithetical, for the antithetical difference characteristically is dimensional, being, to repeat the story very concisely, qualitative, implicative, and functional.

That the second dimension is an implication of the first may not yet be as clear as it should be, and yet mathematically simple addition, which is one-dimensional, implies multiplication, which is two-dimensional, or the defined line implies the plane, the given length or side the area. Moreover, the implication here is truly inherent. Thus, addition and limitation, as in the case of the given length, although formally representing number or length only as mass, very plainly do imply the character of the ratio; and this distinction between mass and ratio is a distinction involving just the difference between one and two or, even more generally, between n and $n + 1$ dimensions. Ratio, too, is always functional, not simply quantitative. But, more than this, the implications of any dimensional field, be the number of dimensions one or n , may be said to be made explicit whenever any operation within the given field is projected to infinity. Such projection, by virtually abstracting the given field, or, say, by reducing this to "zero," liberates the principle of the operation from its formal and always somewhat one-sided setting, and so exposes or at last reveals, what at least those who have eyes may see, the hitherto hidden other dimension of the operation. There always is another dimension when there is an operation. Thus, at infinity such a series as the following: $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8} \dots 0$, or, geometrically, $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}$, has for its last term the operation of halving without anything left to halve, and this is certainly equivalent to a separation, a splendid isolation, of ratio from the given mass, and so to what is at least a very strong innuendo for another dimension. Indeed, remembering that infinity is meaningless without an "operation" of some kind, I find myself constrained to translate any n -dimensional region at infinity into an $n + 1$ dimensional region, and accordingly to conclude—perhaps a digression in this paper—that as applied to space infinity means dimensional rather than merely quantitative variation. Quantitatively any space may be as large as you please, but no space, no line, no plane, no solid, is infinite, just

to me as if any additional dimension, be it second or fourth or n th, might be said in some sense to express something that is implicit to the dimensional region just below, perhaps as multiplication is implicit to addition or area to definite length, and so to make the difference in general between n -dimensions and $n + 1$ -dimensions quite parallel to that between form and content. Only, again on the rectangular hypothesis, at the fourth dimension the material significance of the new dimension is forced upon the attention, as in neither of the earlier cases, for at this dimension the dimensional field is plainly seen to be necessarily turned into itself. (Cf. article in *Mind*, April, 1911, "Dualism, Parallelism, and Infinitism," especially pp. 221-5.)

quantitatively infinite. Still, the mere infinity of space aside, what all this means here is simply that spacially one dimension inherently implies another, and that infinity is always an innuendo for that other dimension, and consequently that with good reason the difference expressed in any antithesis may be spoken of as dimensional. Recall that the terms of the antithesis, like spacial dimensions, not only are qualitative, implicative, and functional, but also imply the infinite series.

7. *Parallelism in All Difference.*—Any single case of real difference is dual and is in so far a case of antithesis. The terms of an antithesis, however, logically require serial mediation, as has been explained here, and the serial variation, so determined, is analyzable into an “orderly and parallel, parallel and orderly, movement of the terms.” In other words, incidentally to the mediation, each term shows variants that correspond specifically in every instance to the variations in the other, so that all the important conditions of what—at least when the question is of mind and matter—is commonly known as parallelism seem to be fulfilled in any difference or antithesis. But the parallelism in all antithetical difference is no mere “occasionalism.” The relation is very far from being external to its terms. Indeed this has been indicated quite definitely, although perhaps not as directly as it should be, in a foregoing paragraph. Thus, more directly and in more detail, given the condition of parallelism between two terms that are antithetical, and given as valid the conclusion, reached here, that antithetical terms are reproductive, double, identical, and serially mediated, then in the parallelism, which is incident to the serial mediation, there can be detected a process, the very becoming to which reference has been made already, having the following important aspects:

(a) Identification, but in the sense that each term gradually loses itself in the other or takes the other into itself, in either way of putting it, the two terms becoming indifferent or identical *in respect to their first meanings*.

(b) Transformation, or qualitative change, in the sense that with the parallelism, or at least with the becoming which this must imply or be a sort of cross-section of, the terms necessarily pass from their first to their second meanings, from their small meanings before identification to their large and qualitatively new meanings after identification.

(c) Persistence or renewal of the antithesis; persistence in the sense that, because the identification and the transformation are coincident processes, the opposition is always rising and assertive, even while it is passing, rising as to the new meanings, passing as to the old, or renewal in the sense merely of such repetition as the

change of meaning must require. Thus who sees only the parallelism, external and occasionalistic, sees a very small part of what is going on.

And here I must bring this possibly merely preliminary report to a close. Only, as I do so, I can not refrain from suggesting some of the important problems that may find interesting solutions from the treatment of antithesis given in this paper. The problems I would mention are three, and from widely removed quarters. Thus: (1) What is the effect on psychophysical parallelism of the fact that the "parallel" terms are always antithetical? (2) If the two schools, either of ethics or of theory of knowledge, the intuitionist or idealistic and the utilitarian or empirical, may be said to base morality, or valid knowledge, on the internal and the external respectively, what effect on the interpretation of the history of ethics or theory of knowledge must result from the present logic of antithesis? And (3), What are the consequences to a doctrine of motion of the conclusion, here reached, that quantitatively space is always finite, its infinity standing, not for infinite quantity, but for dimensional or qualitative variation? Is an infinite velocity, for example, to be entertained even in thought?

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CONTINENTAL CRITICS OF PRAGMATISM

II. ITALIAN CRITICS

IN pointing out the deficiencies of the current pragmatism from the point of view of theology the French criticism has reached its highest point. We may therefore turn to the Italian attitude towards this subject. Bourdeau has already given a somewhat unfavorable account of the southern variations of the system. According to him, pragmatism, which began as an Anglo-Saxon reaction against intellectualism and rationalism, has among the subtler Latins been transformed into a Machiavellian opportunism, an abandonment of the world to our particular fancies, in fact to whatever volitions eventuate in success.²² Reference is here obviously made to James's protégé, the sky-rocket Papini.²³ His individualism is further exemplified in the case of Prezzolini, one of the founders of the obsolescent journal *Il Leonardo*. The latter's modification of pragmatism is then designated a pure sophistication. When James,

²² "Pragmatisme et modernisme," pp. 83, 84.

²³ Cf. my review of his "Il Tragico Quotidiano," *The Nation*, November, 1907.

in his treatment of the deity, reserves the name of gentleman for this prince of shades, Prezzolini, imitating his master, sees fit to define man as a sentimental gorilla. To dominate one's fellow beings it is but necessary to play upon their fancies and prejudices. By the arts of rhetoric, by the tricks so skillfully employed by diplomat, politician, and auctioneer, one can overcome all opposition and mold intractable humanity to one's wishes. This is the Frenchman's interpretation of the Italianate pragmatism.²⁴ It is scarcely fair thus to resolve that variation. There is more in it than the creation of a modern Machiavelli, for other writers of the Peninsula have disparaged this revival of the opportunist teachings of "Il Principe."

Among these writers it is Chiappelli who has most successfully exposed the insufficiency of opportunism for the deeper problems of thought and life. To him the recent renaissance of philosophy in America and France has shown a veritable originality of the speculative spirit, a new restlessness against the older forms of thought. The very revolt against the great dogmatic systems has included a revolt against science itself. Pragmatism itself is a proof of this. Its very discontent with intellectualism betokens a wider vision. In giving play to the emotional and the passional, in emphasizing the primacy of will, it tends towards an idealism transcending mere utilitarianism.²⁵

Chiappelli here brings to notice the latent idealism in the American nature with which the primitive pragmatist, the Yankee exponent of mere success, is bound to reckon. The principle of Pierce, which resolves our choice of speculative systems into a game of pitching pennies, can not hold indefinitely in a land which has known Emerson²⁶ and harbored Berkeley. The latter's subjective idealism Chiappelli considers to be revived in James's humanism. Whether such idealism can be rendered objective, and therefore serve as a check to the radical pragmatic empiricism, is a problem. That result has been in a measure already obtained in Italy. If subjective idealism is manifested in the *Leonardo* of Florence, a broader idealism is coming to light in the *Rinnuovamento* and the *Cænobium* of Lugano.

Italian modernism as a partial reflection of the new humanism furnishes a suggestive hint as to the theologic fate of American pragmatism. The Italian clergy at first eagerly grasped a doctrine which would rehabilitate a waning faith. The first work in James's trilogy

²⁴ "Pragmatisme et modernisme," p. 87.

²⁵ Alessandro Chiappelli, "Les tendances vives de la philosophie contemporaine," *Revue philosophique*, March, 1910, pp. 219, 224.

²⁶ Chiappelli (*Revue philosophique*, March, 1910, p. 231) traces Emerson's idealism to Germany. I am endeavoring to show elsewhere that it was indigenous.

gave to religious beliefs a new vogue. But the second of these works burned the fingers of the orthodox. The Fechnerian hierarchy of world-souls advocated in "A Pluralistic Universe" could scarcely be understood, much less accepted, outside of Swedenborgian and possibly Mormon circles! The Italian critic is therefore right in pre-saging little success amongst us for this revival of animism and polytheism. If he had known the rigors of monotheism in America, he might justly have called James a sort of Yankee Julian the Apostate. In all this an essential weakness of pragmatism is implied. As a cosmology it is an historic retrogression. As Chiappelli observes, the religious conscience has reached the highest point of its evolution in monotheism. So while a pluralistic conception may be just as a natural protest against a too abstract absolutism, yet ultimately that pluralism is nothing but an empirical and provisional view, an atomistic form like that of the cell in a monadology.²⁷

How then can pragmatism and rationalism be reconciled? In the modern renaissance of spiritual values, in the attempts to complete science, justify religion, and ennoble life, there is, as Chiappelli declares, something really solemn. In the rise of American pragmatism there is, therefore, more than a grandiose manifestation of energy brought out in a young civilization greedy of imperialism. Rather is it a new philosophy of faith and feeling necessary to establish the human equilibrium after the negations of agnosticism and the limitations of criticism.²⁸ For these words from a foreign observer an American may be grateful. But is it still possible to bring about that suggested reconciliation between pragmatism and rationalism? Hébert had expressed a pious wish for that result in his hope that the twentieth century would see a closer union of positive science and speculative philosophy. And while Chiappelli believes that the contrast between the new radical empiricism of the pragmatists and the rationalism of the idealists is not an irreducible antinomy, yet he confesses that their approximation may be indefinitely prolonged. He aspires to a cooperation between natural science and metaphysics, but that is as far as he gets. The difficulties of the cooperation are too great, and these difficulties are brought out by his compatriots.

To Aliotta is left the task of showing the inherent nature of pragmatism to be irreconcilable with idealism. The American movement is to him little but a revival of British empiricism. Bacon, Hume, and Spencer are the real ancestors of James, and consequently in the latter there is an inherited tendency to relativism at the expense of rationalism. When James talks of practical results he

²⁷ "Les tendances vives de la philosophie contemporaine," p. 242.

²⁸ *Ibid.*, p. 247.

does but echo Lord Verulam. The latter may have let slip some words about the value of *contemplatio rerum*, but his paramount interest lay in *inventio fructus*. So with Hume; he did not wholly deny the value of disinterested research, but his main advice was to make science human, refer it directly to action. And Spencer also, while holding to a theory of evolution, made even the logical structure of thought a means of adaptation which, like all the other organs, has its origin in vital needs.²⁹

Pragmatism is in truth an Anglo-Saxon plant, but it has likewise some continental roots. Relativism as opposed to rationalism, the reasons of the heart as opposed to the reasons of the head, are to be found in Pascal, while the will to believe is adumbrated by the doctrines of Renouvier. Nevertheless, along with these similarities there are differences, for American pragmatism possesses a distinct physiognomy of its own. This is shown indirectly by the fact that the "new" French philosophy, such as that of Bergson and Le Roy, emphasizes not so much the external, practical, empirical, as the internal, spiritual, profound. Now of the three varieties of pragmatism specified by Dewey, as respectively applying to objects, to ideas, and to beliefs, the criterion is not so much one of internal as of external harmony. The pragmatic laws are less ends in themselves than means to success; and while the logical function has an active part in the evolution of experience, every cognitive act is judged in so far as it "makes a difference *to* and *in* things."³⁰

In emphasizing the empirical at the expense of the rational, pragmatism, claims Aliotta, lacks a real ontology, since it makes the universe appear not *sub specie æternitatis*, but *sub specie generationis*. In this there is discovered a certain mark of modesty, for pragmatism does not wish to say that thought creates reality, as idealism pretends to do, because its function is solely that of recognizing, of reconstructing, an empirical situation, already existing. But does this functional, this non-ontological program lead to relativism, as Aliotta claims? In making reality plastic, and indeterminate except for our volitions, there would seem to be some ground for a certain disregard of environmental restrictions of which Baldwin complains.³¹ That such is a limit of pragmatism James denies in his replies to the misunderstanders of pragmatism.³² But that denial does not appear adequate, for pragmatism remains predominantly subjective; its dynamic point of view turns into an indeter-

²⁹ A. Aliotta, "Il pragmatismo anglo-americano," *La cultura filosofica*, March-April, 1909, p. 106.

³⁰ "Il pragmatismo anglo-americano," pp. 108-121.

³¹ *Psychological Review*, January, 1904.

³² *Philosophical Review*, Vol. 18, No. 1.

minism; indeed, with all its practicality, it is averse to that form of realism which holds that things have a proper nature, and follow certain rules that are not made by us, but are to be recognized as independent of our subjective activity if we wish in any way to dominate them. In short, these new empiricists should follow the dictum of their great predecessor, the dictum of Bacon—*natura non nisi parendo vincitur*.³³

So much for Aliotta; with Giovanni Cesca we have a view of pragmatism which pushes it back to the beginnings of Protestantism. Like the latter, it is called a reaction of the interior against the exterior, a revolt of faith against authority. And this new Protestantism, like the old, being based upon the principle of individualism, runs the danger of falling into atomism and anarchy, and into the inertia of mysticism.³⁴ Cesca's strictures are evidently called forth by the north Italian pragmatists whose motto appears to be *fingunt creduntque*. But the kindred American subjectivism is also involved. If belief creates its object, there is truly manifest a tendency away from the scientific and towards the transcendental. If the laws of the world lie solely in the human judgment, this would indeed turn the pragmatist into the man-god of Novalis whom Prezzolini holds up to admiration.³⁵

This resolution of pragmatism is somewhat curious. As Bourdeau has previously shown,³⁶ it is a pure sophistication. But such a tendency to sublimate the subjective, to build a world out of individual fancies, is not characteristic of the entire movement. There is one wing that leans to irrationalism, there is another that has rational bases to its thought. If the Italian school has inclined towards the transcendental and metempirical, the early American school has been more cautious. Pierce rightly contended against the transformations by his successors of his pragmatism into their pragmatism; that which started as an heuristic principle should never have been permitted to develop beyond the principle of Nietzsche which distinguishes the truth and falsity of doctrines by their validity.³⁷

Cesca's criticism appears a trifle reactionary and contradictory. He would keep the movement in its primitive, larval state, yet he grants that one cause of its rapid development has been its approximation to the functional as against the older structural psychology.

³³ "Il pragmatismo anglo-americano," p. 131.

³⁴ Giovanni Cesca, "La filosofia dell' azione," *Biblioteca Sandrone*, No. 38, p. 262.

³⁵ "La filosofia dell' azione," p. 263.

³⁶ "Pragmatisme et modernisme," Ch. V.

³⁷ "La filosofia dell' azione," p. 272.

An acceptance of modern biological notions is given as another cause of its success. But while functionalism and pragmatism agree in their instrumental interpretation of knowledge, they differ in their philosophic conclusions. The one gives merely a vital, the other tends towards a veridical, interpretation of the useful, and thus runs off from bionomics into epistemology. Cesca finds no fault with the biological theory of utility as being one of relativity, yet he criticizes pragmatism for a relativity which tends towards the solipsistic and away from the social.³⁸ The criticism is well taken, but hardly in this connection. It is from a biological and not an epistemological standpoint that the last and most weighty objection to present pragmatism may be raised. There is that narrow opportunism which is contented with immediate personal success, a Machiavellian self-satisfaction which, as Cesca says, may prove of grave harm to the individual. But that broader opportunism, which passes beyond the absolute autonomy of the individual and takes into consideration the external criterion of social authority—this pragmatism has not yet reached.³⁹

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AN EXPERIMENTAL STUDY OF THE FUSION OF COLORED AND COLORLESS LIGHT SENSATION THE LOCUS OF THE ACTION

THE following is a brief preliminary statement of the results of experiments carried on in the Bryn Mawr college laboratory during the past year to determine at what physiological level the action of brightness¹ upon color excitation may be assumed to take place. A full report of this work will take the following form: (1) A brief statement will be made of previous work done by the writers on after-image and contrast sensations aroused by stimuli in which no color was sensed. (2) An explanation will be sought for the results obtained in this work in terms of the influence of brightness upon color excitation. (3) Evidence will be submitted that the level at which this influence takes place is posterior to that usually ascribed to the paired processes, positive and negative. (4) A suggestion will be made as to the level at which other visual fusions take place, subject to modification by the results of work now in progress.

In a paper read before the Princeton meeting of experimentalists

³⁸ "La filosofia dell' azione," p. 273.

³⁹ *Ibid.*, pp. 281, 283.

¹ For the sake of brevity, brightness is used here as a general term for the colorless sensation series—white, black, and the grays.

in 1908, one of the writers discussed the experimental conditions under which he had obtained colored after-image and contrast sensations from stimuli in which no color was sensed. A formulation of these conditions, together with the evidence of allied limen and fusion experiments, showed the phenomenon to be a peculiarity of the inhibitive action of brightness upon color. Brightness fused with color inhibits its saturation. With the possible exception of the region just within the limits of sensitivity for two colors, the following may be stated roughly as a law of this action for all colors and all parts of the retina: white inhibits most, grays in the order from light to dark next, and black the least. The technique, then, of getting, for example, a colored after-image from a stimulus in which no color is sensed becomes merely a matter of fusing the least favorable brightness quality with the stimulus color, and the most favorable with the after-image color. —When this technique was carried out in its best form, the colored after-image was gotten in practically every case.

Two interpretations of this phenomenon are possible. It may be considered (1) that this action upon the stimulus color takes place in the retina at the level of the paired processes, positive and negative, in which case we should expect the negative excitation to be diminished by whatever diminishes the positive excitation; or (2) it occurs posterior to the level of the paired processes, in which case neither the positive nor the negative color excitation would be affected by the brightness excitation. The central response alone would be modified. If the results of the preceding investigation are granted, the second interpretation alone seems tenable. If the color in the stimulus is inhibited by the addition of a brightness excitation, and no effect of the inhibition is observed in the after-image, it seems fair to infer that the inhibition takes place posterior to the level of the after-image process. But the previous investigation was not quantitative. The results obtained did not show, for example, that the inhibition of the stimulus color had no effect upon the after-image. They showed merely that, working near the limen, the stimulus color might be inhibited and the complementary color still be sensed in the after-image. A part of the present program, then, becomes the attempt to determine, as accurately as possible, to what degree, if at all, the intensity of the after-image excitation is decreased by adding to the stimulus color a brightness excitation unfavorable to its saturation. This determination should have a two-fold bearing. First, it should make plain, once for all, why it is possible to get color in the after-image when none is sensed in the stimulus. (It has never been claimed, for example, that it is possible to get an after-image of a brightness stimulus so weak as to be

below the limen of sensation.) And, secondly, it will throw some light on the broader problem presented by the fusion of brightness with color. By serving to indicate the level at which this fusion takes place, this determination helps, for example, to explain a number of somewhat puzzling phenomena attendant upon the fusion of brightness with color, in case of positive, contrast, and after-image sensation.

The question of the level at which the action takes place, however, need not rest upon one line of evidence alone. There are two effects of brightness upon color. (1) It reduces its saturation, and (2) it changes the quality or tone of certain colors. Both types of effect have been pressed into service in this investigation. Furthermore, the problem has been extended to contrast as well as to after-image. It has been found, for example, that a change in the saturation or quality of the inducing color caused by adding a brightness excitation does not produce the appropriate or expected change in the contrast color. We have, then, similar evidence that the action of brightness on color takes place posterior to the level at which induction takes place. In brief, it is shown in this study: (1) that when the color of the stimulus is inhibited by the addition of a brightness excitation, the intensity of the after-excitation, judged in terms of the duration of the after-image, is not affected by this inhibition; (2) that when the tone of the color aroused by a given stimulus is changed by the addition of a brightness excitation, the color of the after-image does not undergo a complementary change; (3) that when the saturation of the inducing color is inhibited by the addition of a brightness excitation, the saturation of the contrast color is not affected by the change; (4) that when the tone or quality of the inducing color is modified by adding a brightness excitation, the tone of the contrast color is not determined in the complementary direction.

The technique for the control of the brightness conditions, which is a most important feature of the work, can not be gone into in this brief report. It will be sufficient to say that, in case of the after-image experiments, for example, the brightness excitation had to be added to the stimulus color in such a fashion that it did not itself give an after-image; for if it had, this brightness after-image would in turn have acted upon the colored after-image, and we should not have gotten as colored after-image the direct sensation response to the negative color excitation. But by the proper control of the brightness conditions throughout the experiments, it was possible to isolate or shell out, so to speak, in the form of the colored after-image, the sensation response to the negative color process in the retina, and thus have a means of testing directly whether or not the positive

process was inhibited by the addition of the brightness excitation. A similar control of brightness conditions was exercised in the contrast experiments, with the results mentioned in (3) and (4) above.

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SOCIETIES

THE FOURTH INTERNATIONAL CONGRESS OF PHILOSOPHY

THE Fourth International Congress of Philosophy was held at Bologna, April 6-11, in accordance with the general program previously published. The absence of several men who were expected to take a prominent part in the work of the Congress, however, made it necessary to modify the program very considerably. Indeed, the news which met the delegates on their first arrival at Bologna, that Windelband, Riehl, Ostwald, Poincaré, Lalande, Stout, and others on the program were all to be absent, seemed at first to render doubtful the success of the Congress. The committee of arrangements, however, were fortunately able to fill the places thus left vacant, and to present a well-balanced and interesting program which was carried through with much enthusiasm. The registration of members amounted to more than three hundred. Italy had naturally the largest representation, both in members present and in speakers. In addition to the distinguished president, Professor Enriques, Tocco, Peano, Croce, Valli, Chiapelli, Padoa, Gemelli de Sarlo, and others took a prominent part in the proceedings of the Congress. Among the French representatives were Boutroux, Bergson, Léon, de Roberty, Rey, Durkheim, Parodi, and Langevin. Külpe, Driesch, Deussen, Nelson, Elsenhaus, de Keyserling, Deyoff, Itelson, and others spoke for Germany, while Belgium, Switzerland, Poland, Russia, and nearly all the countries of continental Europe were represented. The only papers presented in English were by Dr. Schiller, of Oxford, on "Error"; Miss E. C. Jones, of Cambridge, on "A New Law of Thought and Its Implications"; Dr. E. S. Russell, of London, on "Vitalism"; Miss Mary Mills Patrick, of Constantinople, on "Ænesidemus"; Dr. Sheffer, of Harvard University, presenting in French a paper entitled, "La classe des 'primitives' de l'algèbre de la logique." The representatives from America were Professor Fullerton, of Columbia (who was called upon to preside at several of the sessions), Dr. Sheffer, and the writer of this note.

The Congress was held under the high patronage of the King of

Italy, who sent his cousin, the Duke of Abruzzi, as his representative to convey a message of welcome to the delegates assembled in the main hall of the old university building on April 6. An address of welcome was also presented on behalf of the city by the Prefect of Bologna. On behalf of the delegates Professor Külpe, of Bonn, responded with fitting words of thanks to the King and to the city for the courtesies shown to the Congress, and at the same session the president of the Congress, Professor Enriques, presented his address on "The Problem of Reality," in which he defined the respective spheres of science, philosophy, and religion.

One session of each day was devoted to a general conference, in which two or three addresses were given on topics of general interest, which were in some cases followed by discussion; and one session was given up to simultaneous meetings of various sections, where shorter papers were read and discussed. These sections were arranged under the following headings: General Philosophy and Metaphysics; History of Philosophy; Logic and Theory of the Sciences; Ethics; Philosophy of Religion; Legal and Social Philosophy; Esthetics; Psychology. In general, the plans for these meetings had been carefully made; but a good deal of confusion resulted from the mysterious and unexplained absences of many who had announced their intention of taking part in the program. In some sections only one or two speakers appeared out of a list of five or six. The papers actually read, however, were representative of the various departments of philosophical interest, and in many cases were vigorously discussed, though, as a rule, papers presented in English and German were not generally understood. It seems impossible at this time to give any analysis of the content of the papers presented to the Congress, or to form any opinion as to what views are likely to prove especially suggestive and fruitful for the future development of philosophy. For such conclusions it will be necessary to wait for the publication of the official proceedings of the Congress. The sections best attended, and in which the greatest interest was perhaps manifested, were those on general philosophy, and on logic and methodology of the sciences; while a large number of papers dealt with the relations of science and philosophy, and with an analysis of certain fundamental conceptions common to both science and philosophy.

The reception given to the delegates was most cordial, and the hospitality of the university and the city of Bologna most generous. In addition to private entertainments there was an informal reception given by the university on the evening of April 5, a reception and dinner offered by the city, an excursion to Ravenna, where the visitors were entertained by the government of that city. The

museums, galleries, and other public institutions of Bologna were also thrown open to the visitors.

An invitation was presented from President Butler of Columbia University to hold the Fifth International Congress, in 1915, in New York City. This invitation, presented by Professor Fullerton, aroused much interest, and its acceptance was favored by a considerable number of the delegates present. In presenting the greetings of the American Philosophical Association, the writer took occasion to second the invitation of Columbia University in behalf of that Association and of American philosophical scholars as a whole. The objections of distance and expense, urged by certain representatives of France and Italy, led finally to the decision to accept the invitation of the University of London to hold the next International Congress in that city. Lord Roseberry, as Chancellor of the University of London, was named honorary president, and Professor Bernard Bosanquet president of the Fifth Congress, to be held in 1915. While this decision was accepted heartily by all, it is evident that there is a very genuine and general interest among European scholars in the philosophical work now being done in America, and that there is a strong disposition on the part of many members of the Congress to accept the invitation at an early date to cross the ocean for an International Congress of Philosophy.

J. E. CREIGHTON.

REVIEWS AND ABSTRACTS OF LITERATURE

Riddles of the Sphinx: A Study in the Philosophy of Humanism. F. C. S. SCHILLER. New and Revised Edition. New York: The Macmillan Co. 1910.

No less than politics, philosophy is confirming the recent epigram: "Our old men are radicals, and our young men conservatives." Of the numerous contemporary illustrations of this in the field of metaphysics, none is more striking, and assuredly none more entertaining, than Mr. Schiller's new "Riddles of the Sphinx," which is at once more and less than the original edition of nineteen years ago; less in that it has suffered "a little toning down"—as the preface assures us—and more in that many annotations have been woven in. But the Sphinx changes not, nor do her riddles and their answers. "The central doctrines" of Mr. Schiller's volume "are essentially unchanged, and may be taken to attest the stability of the author's personality." This confession is true. The book is the old book, and Mr. Schiller's personality is stable—be it said to the confusion of those who have sneeringly described him as a flighty radical, fresh as May dew and no less evanescent. His philosophy reveals a mind respectful of the past and unshakable in its faith that the great questions were correctly put and answered centuries ago. This compliment will not

be withdrawn in case Mr. Schiller pronounces it an abominable misunderstanding of his writings—which the reviewer fears he may do, inasmuch as his preface declares that humanism “has rendered more or less out of date every earlier work in metaphysics, in much the same way as the rise of evolutionism rendered out of date every pre-Darwinian book on biology.”

The genuine conservative never dreams that the questions his ancestors raised may have been altogether products of local and transient circumstances. Pragmatists, of course, not only dream this, but adduce some pretty convincing fulfilments of it; pragmatists are radicals, though, and Mr. Schiller wisely calls himself by another name. For he is struggling to reconcile (O blessed word!) philosophy, science, and religion. “Should we not cherish the hope of a final reconciliation of these three speculative activities, of such a harmony of all the elements of thought as is worthy of their common parentage (which, he says, is animism!), and as will enable all in the end to subserve in unison to the attainment of the perfect life? . . . May not the true religion be but the emotional aspect of the true philosophy?” Twentieth-century people might suggest that religion is the hysterical aspect of befuddled philosophy, and that to “reconcile” its yearnings and visions with spectral analysis and amphi-mixis is about as profitable a pastime as reconciling hallucinations with normal, socially corrected testimony. Far be such impiety from the true ancestor-worshipper!

The thorough conservative is, to the core, intellectualistic—so very intellectualistic that he suspects it not. He believes his feelings and conduct are absolutely shaped, colored, and directed by reason; what he thinks out concerning the drift and the nature of things in general—in brief, his conclusions about God, freedom, and immortality—will inevitably make life endurable or unendurable, worth living or fit only to be quenched. And, furthermore, he believes that, if “the fundamental perversity or irrationality of all things” can be shown, he is plunged into pessimism, which is “the utter negation of life.” This is the precise and much-repeated opinion of Mr. Schiller. It is the exact opposite of pragmatism, you will observe; for Mr. Schiller believes there is a “meaning” to life as a whole, whereas pragmatists most explicitly limit “meaning” to a type of relation *within the cognitive situation*. “It is futile,” says Mr. Schiller, “to bid us confine ourselves to this present world of phenomena, and to assure us that we have no interest to raise the question as to the nature of God and of our own future. . . . The sphere of positive science is not self-supporting, self-sufficing, self-explaining.” And elsewhere: “The ideal of true humanism, and the ideal also of true science, would be realized when all our explanations made use of no principles which were not self-evident to human minds, self-explanatory to human feelings.” Is this not the very essence of intellectualism? Can any other philosophy or philosophical method so exalt self-evident principles? Can any other maintain that, just because a concept is perfectly clear to us, we must interpret the universe through it? Surely, if Descartes suffered from vicious intellectualism, our humanist groans on the same bed with

him. It matters not what idea each thinker happens to think the clearest—be it the number series of Pythagoras, or the "*Cogito*" of Descartes, or the "Ego" of Mr. Schiller—the resulting philosophy is perverse intellectualism if everything in the world is either reduced *to* that idea or else so interpreted *through* it that whatever proves unintelligible *in terms of it* is pronounced unreal.

The eminently respectable antiquity of humanism and its intellectualistic root appear undisguised, first, in those ideas which seem self-evident to it, and secondly, in the problems which it ranks as most important. As to Mr. Schiller's self-evident first principles, they are professedly even more ancient than those generally favored by intellectualists; they are of the kind which "clings to the analogy of human agency." To anthropomorphism must philosophy hark back, Mr. Schiller believes; and why? Because "anthropomorphic means partaking of the nature of man, and what human reasoning can fail to render the peculiarities of the human reason?" We now may observe what strikes the author as self-evident: first, there is a knower and a known; and, secondly, like knows like, as Empedocles said. Many latter-day sinners find quite as much obscurity in these axioms as in Descartes's inference from "*cogito*" to "sum," or the pre-Socratic dichotomy, "being" and "not-being," or the doctrine that one is the perfect number, or the forbidding of beans to philosophers. They will likewise shrink from the axiom, "*esse = percipi*," implied unmistakably in Mr. Schiller's entire discussion of "The Metaphysics of Evolution" where, at the end of his criticism of Sir William Crookes's hypothesis of elementary substance, Mr. Schiller says: "The protyle . . . is in reality a synonym for NOTHING; *for it is devoid of all the characteristics of sensible reality*. It is not tangible . . . nor audible . . . nor visible. . . . In short, it has no qualities that could render it in any way perceptible." So whatever lacks sense qualities is non-existent. Little novelty here! Rather the same old story which teachers of elementary logic use in their exercises on fallacies!

One might point out the conservative intellectualism of Book I, wherein, after showing that pessimism is the philosopher's most important problem, the humanist solves it to the glory of God and man. Pessimism is the view that the world is either perverse or irrational, thinks Mr. Schiller, and if the world is either, life is "negated," which, I suppose, means that it is somehow hampered, rendered nugatory. Pessimism preaches "the hideous and unalterable sordidness of life"; and few would care to survive to feel it long. Back of such an interpretation lies the extreme intellectualistic presupposition that a theory about the cosmic drift *must* regulate our practical attitudes, feelings, and conduct from moment to moment. If the world isn't engineered so as to guarantee unlimited bliss for all hands, your knowledge of this must *logically* pervade your dinner, the evening at the theater, and to-morrow's boat ride; must, in short, throw its lights or its shadows across each hour. The obvious retort that springs to modern lips is that, as a matter of psychological *fact*, these lights and shadows do not fall upon men's paths as the logic of the case demands; Epicurus, Lucretius, and Professor Santayana

are not the rare exceptions, they are rather the shining examples of the normal man's invincible indifference in practical life to the intellectualist's demand that we allow metaphysics to sour our breakfast porridge and paralyze the nerves which give us a good time. What may be truth of the cosmos through all the reaches of time is not, as a matter of fact, true of little spots in it at some brief moments; and men, who live and move only in little spots and only at brief moments, always have reacted and always will react only to these intimate near tracts of time and space. Pessimism is not a practical problem for anybody save an impractical person. This fact is highly conducive to useful optimism.

The reviewer, in failing to discuss the questions raised by "The Riddle of the Sphinx," has proved unfair to its author; and he regrets that he is capable of nothing better than such injustice. But he is too strongly convinced that wayfarers should pay no attention to Sphinxes and their riddles. All Sphinxes are of the same breed as the Sphinx of Thebes, which used to ask: "What animal goes on four legs in the morning, on two at midday, and on three in the evening?"—and sent those who answered wrongly to jump off a high cliff. Modern man, absorbed in making the world a more comfortable tavern, refuses to waste a minute over such riddles, much less to take his wrong answers so tragically.

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Geschichte und Kulturgeschichte. WALTER GOETZ. *Archiv für Kulturgeschichte*, March, 1910, pp. 4-19.

Beginning with the eighth volume, the *Archiv für Kulturgeschichte* is published by B. G. Teubner under the general editorship of Dr. George Steinhausen. At the same time with this significant advance in its material equipment, the review is undergoing a corresponding change in character. More distinctly than hitherto it is to be a repository for work done in the broad field of the history of culture. The editors believe this to be not merely the summation of the results of specialized study of the history of religion, art, morality, industry, etc., but a distinct form of research which takes up these particular results and elicits from their synthesis valuable generalizations. The European civilization of the middle age and of modern times, in particular that of Germany, will be kept in the foreground.

Professor Goetz's article is designed to present further discussion of the aims of the *Archiv*. The author begins by stating that certain views that were advocated a decade ago in Germany are now almost wholly abandoned; viz., the biological analogy of history; the dominance assigned to the social-psychological factors, and the "comparative method." The younger generation is engaged in an extension of the historical field to which Lamprecht gave the name "history of civilization," or "history of culture" (*Kulturgeschichte*). Negatively, the new discipline must be distinguished from the old. That which was formerly called *Kulturgeschichte* has been taken over by *Volkskunde*, since the latter came into existence. Whatever falls within this field should no longer be desig-

nated by the more special name. It must be admitted, indeed, that the definition of *Kulturgeschichte* is still somewhat unsettled. Bernheim rejects the equation of it with universal history as too vague, and defines it as "the history of the development of the forms and processes of social life, and of the instruments and results (intellectual and material) of the non-political activity of man." But this raises the question whether political life and the life of culture are separate, whether the state is to be considered as standing apart. As it is, however, the term is fairly intelligible. If, *e. g.*, a lecture on the history of medieval culture is announced, students at once understand it to indicate a discussion comprehending the political, the economic, and the intellectual life of the Middle Age—an essay in the general or total history of the time.

The more important question is whether the historian should consider it his function to cultivate history in this comprehensive sense. That political history is not the whole of history its stoutest advocates would admit; however highly you estimate the history of the state, there remains a whole range of significant activities which are just as truly historical material. Though political historians assert that the political life is the important thing in the progress of events and that in limitation to that field lies the hope of attaining the scientific ideal, yet the question remains open, Whose is the comprehensive field of all describable human activities?

In a time of gathering and arranging new material, delimitation was necessary. But how many brilliant works have owed their existence to a transgression of these narrow bounds, the particular problem in each instance necessitating deviation from the old methods. No history of the Reformation was ever written without borrowing much from theology; none of the French Revolution without some consideration of philosophy. A study of the great nineteenth-century histories reveals that their authors have branched out in many directions according to individual inclinations and aptitudes. Ranke himself went out of his strict domain to write on "Italian Poetry." It is necessary that new and larger aims should be set up. Scholarship obeys the law of outgrown ideals. Were there no such restatement of ideals, historical scholarship would result in an intolerable sum of repetitions. It can preserve its function as a teacher of the nation only so long as it takes account of all the significant activities in national development.

After all, is the broadening of the problem of historical scholarship so impossible? Archeology has never been so circumscribed. Classical philology and Egyptology have always regarded the whole of ancient culture as their province. Mommsen thought he could give no adequate account of Roman history without including industry, religion, literature, art. Eduard Meyer's "History of Antiquity" is history of culture in our sense. What was possible for antiquity is possible also for medieval and modern times. Future teachers will be little benefited by accounts of coronations and political squabbles. They should be enabled to present a view of the entire range of medieval life, for instance. The historian of a civilization must use the results of special researches, but always with a

view to ascertaining their mutual relations, and to ultimate generalization.

A new method is required by the new ideals; but this, argues Goetz, will have to be based upon the historico-critical method. The assumption of "laws of history" and belief in the exactitude of the "comparative method" exclude inductive investigation in the attempt to make history an exact science. Not that the search for analogies is valueless; we need discussion of these as our sociological and ethnographic knowledge increases. But their value is limited and subordinate. Finally, the history of civilization needs representation in the university faculties quite as much as world-history. And these claims, it is maintained, are not new or radical; they are merely a description of present-day tendencies in historical thought.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. January, 1911. *Practise Effects in Free Association* (pp. 1-13): F. L. WELLS. - Practise decreases the free association time, with an accompanying differentiation and particularization of the responses. The free associations tend to become more superficial. The emotive value of free association experiments is decreased by practise. *A Preliminary Experimental Study of the Conscious Concomitants of Understanding* (pp. 14-64): HIKOZO KAKISE. - The type of imagery depends upon the way a word is given to the subject. The frequency of memory images is conditioned only by the rate of the reaction. The usual association tests do not indicate the mental content, but the *Ausfrage* method is better for such purposes. The feeling of concept is either a feeling of familiarity or of content. *The Psychopathology of Apraxia* (pp. 65-85): ISADOR H. CORIAT. - A general discussion followed by a report on two cases. The chief difficulty of the patients was the inability to transfer a subjective choice into an objective reaction. The disturbing lesion was probably located at the angle of the third, left frontal convolution of the Sylvian fissure. The disorders could be partially corrected through visual impressions. *Some Physical Factors Affecting Reaction Time with a Description of a New Reaction Key* (pp. 86-93): FRANK ANGELL. - A preliminary survey of the influence of the key on reaction time. The increase in the resistance of the key tends to lengthen reactions and decrease the distance of the movement. *Precision of Measurements Applied to Psychometric Functions* (pp. 94-98): F. H. SAFFORD. - A discussion of three recent articles on psychometric functions by Dr. F. M. Urban from the standpoint of physical measurements. *The Psychology of Drowsiness* (pp. 99-111): H. L. HOLLINGWORTH. - An introspective and analytical study of peculiar states of lowered consciousness. Some foreign element often substitutes itself for other datum and takes its place in the composition of the hallucination.

In these states there is present a fluid kind of association on a sensory basis bringing about peculiar combinations. Intelligent inhibitions are absent. The details of the drowsy consciousness fade more quickly than in the normal state. *Minor Studies from the Psychological Laboratory of Vassar College. An Effect of Fatigue on the Judgments of the Affective Value of Colors* (pp. 112-114): ETHEL L. NORRIS, ALICE G. TWISS, and M. F. WASHBURN. *A Note on the Affective Values of Colors* (pp. 114-115): M. F. WASHBURN. *The Discrimination of Articulate Sounds by Raccoons* (pp. 116-119): W. T. SHEPHERD. — The animals gave responses that seemed very characteristic of discrimination, yet the author hesitates in giving this as a final conclusion. *Book Reviews*: Dr. Franz Nikolaus Finck, *Die Haupttypen des Sprachbaus*: ALEXANDER F. CHAMBERLAIN. Amy E. Tanner, *Studies in Spiritism*: JOSEPH JASTROW. C. L. Herrick, *The Metaphysics of a Naturalist; Philosophical and Psychological Fragments*: W. S. FOSTER. Paul Meunier et René Masselon, *Les rêves et leur interpretation*: THEODATE L. SMITH. Alfred Binet, *L'année psychologique*. H. E. Cushman, *A Beginner's History of Philosophy*. Robert Gaupp, *Psychologie des Kindes*. Stanley Le Fevre Krebs, *Trick Methods of Eusapia Palladino*. Wolfgang Weichardt, *Ueber Ermüdungstoffe*. H. E. Wingfield, *An Introduction to Hypnotism, Experimental and Therapeutic*. Anne M. Nicholson, *The Concept Standard*. E. B. Titchener, *A Text-book of Psychology*. Joseph Jastrow, *The Qualities of Men*. A. Schoppa, *Die Phantasie nach ihrem Wesen und ihrer Bedeutung für das Geistesleben*. G. Haberlandt, *Die Sinnesorgane der Pflanzen*. F. G. Benedict and Thorne M. Carpenter, *The Metabolism and Energy Transformations of Healthy Man During Rest*. E. J. G. Stumpf, *Der Traum und seine Deutung, nebst erklärten Traumbeispielen*. Mary Whiton Calkins, *A First Book in Psychology*. Paul Kariskha, *Straight Goods in Philosophy*. E. L. Thorndike, *Educational Psychology*. James H. Snowden, *The World a Spiritual System*. William Brown, *The Use of the Theory of Correlation in Psychology*: F. M. URBAN. Heinrich Ernst Ziegler, *Der Begriff des Instinktes, einst und jetzt; eine Studie über die Geschichte und die Grundlagen der Tierpsychologie*: J. W. BAIRD. G. W. F. Hegel, *The Phenomenology of Mind*. G. M. Whipple, *Manual of Mental and Physical Tests*. Max Talmey, *Psyche*. Count E. M. Cesaresco, *The Psychology and Training of the Horse*. J. Mourly Vold, *Ueber den Traum*. Theodore De Laguna and Grace Andrus De Laguna, *Dogmatism and Evolution: Studies in Modern Philosophy*. Hudson Maxim, *The Science of Poetry and the Philosophy of Language*. Frederick G. Bonser, *The Reasoning Ability of Children*. L. Forbes Winslow, *The Suggestive Power of Hypnotism*. M. Pelletier, *Les lois morbides de l'association des idées*. William A. White, *Bulletin No. 2, Government Hospital for the Insane*.

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. XVI. Band, Heft 4. November, 1910. *Ueber die Grenzen der naturwissenschaftlichen und der historischen Methode* (pp. 431-452): C. FRIES. — Unity has been the goal of human knowledge and unification the all-pervading

method. The theory of conservation of matter and energy reigns supreme not only in the inorganic but also in the organic world, mental life included. Thus viewed, there can be no essential distinction between physical, biological, and historical method. Rickert is wrong simply because he fails to analyze thoroughly the concepts law, history, etc. Nature is but one; hence also science is but one. *Ueber Bedeutung und Wesen der Elementar-begriffe* (pp. 453-497): L. GABRILOVITSCH. - Colors, sounds, direction, etc., these ultimate indefinables forming the raw material of concepts, are *elementary concepts*. Now, qualities (in the cognitive process) are relations, and as such they occur *in* real contents, which latter, by the very fact of their being so or so qualified, form spheres of experience. Obviously, experience as a whole is the prius of these spheres, whence the opposition content-form is no more: the spheres in their mutual relations exhibit the *formal*. *Zur Systematik der Wissenschaften* (pp. 498-520): E. BARTHEL. - The domains not conquered by the natural sciences and still retained by philosophy are: epistemology, logic, metaphysics, ethics, and esthetics. Now, epistemology as a propædæutic science is hardly of any use to philosophy; logic enjoys autonomy; metaphysics has been tottering all along, and with the advent of the teleologic method its abolition is almost an accomplished fact. Thus, only ethics and esthetics remain the legitimate possession of philosophy. The following is a logical basis for a system of the sciences: (a) epistemology (the possibility of knowledge); (b) logic and mathematics; (c) natural sciences (the study of objects as such); (d) philosophy (the science of values). *Die Entwicklung und Ausbreitung des æsthetischen Lebens durch die Kunst* (pp. 521-531): R. M.-FREIENFELS. - While teaching to regard objects in themselves, apart from their practical use, art creates "esthetic distance." Furthermore, by a sort of suggestion art prepares a direct esthetic attitude toward objects. Finally, by *transforming* the objects art discovers new esthetic viewpoints. *Die Klassen des Seienden* (pp. 532-535): T. KEHR. - In terms of duration being is infinite or finite. In terms of qualification, since what is is something, being is material or immaterial. Schematically, thus:

| | | |
|-------|---------------|---|
| Being | { Intransient | { immaterial: Vacancy = Space. |
| | | { material: the Filler = Substance. |
| | { Transient | { immaterial: Orders and Forms (Space-sections). |
| | | { material: Unified substance-manifolds = Compound objects. |

Die theoretischen und praktischen Folgen des Determinismus (pp. 536-544): G. WENDEL. - Theoretically, determinism renders possible philosophic monism, guards against the mystifying hypothesis of psychophysical parallelisms, and stimulates the generalization of the law of conservation of energy. Practically, determinism, regarding, as it does, human acts as determined by *motives*, makes it possible to *develop* character, bars fatalism, and brightens the prospects of human progress. Moreover, it is all compatible with an idealistic standpoint. *Die neuesten Erscheinungen*.

REVUE PHILOSOPHIQUE. December, 1910. *Les travaux de l'école de Wurzburg* (pp. 553-580): N. KOSTYLEFF. — This is a school of introspection, and its success would appear unfavorable to the objective conception of thought (*cf.* first article) were it not for the fact that it ends in a purely metaphysical synthesis. *Le rôle de l'individu dans la formation de la morale* (pp. 581-599): LAHY. — An endeavor to define the real value of the individual whom modern sociology has seemed to reduce to a mere executor of rules socially established. *Critique des méthodes de l'esthétique* (pp. 600-624): CH. LALO. — Traditional esthetics, when mystical, repels the idea of method; otherwise, it falls under the conditions of general logic, and has to define its problems and solve them as any other science. Its method is then not separable from its solutions. *Revue générale. Les revues allemandes de psychologie en 1909*: FOUCAULT. *Analyses et comptes rendus.* James, *The Meaning of Truth*: L. DAURIAC. De Wulf, *Histoire de la philosophie en Belgique*: G. DWELSCHAUVERS. P. Nève, *La philosophie de Taine*: J. SEGOND. F. Jodl et F. P. Fulci, *L'etica del Positivismo*: M. SOLOVINE. Dr. O. Lempp, *Das Problem der Theodicee in der Philosophie und Literatur der 18. Jahrhunderts bis auf Kant und Schiller*: J. SEGOND. A. Matagrín, *La psychologie sociale de Gabriel Tarde*: L. DAURIAC. L. Schiemann, *Gobineau's Rassenwerk*: DR. S. JANKELEVITCH. *Notices bibliographiques.*

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NOTES AND NEWS

HARVARD UNIVERSITY has recently acquired from Dr. Arnold Genthe, of San Francisco, some very important manuscripts of Hegel which were thought to have been lost. They contain: (1) mathematical notes, dated September 23, 1800; (2) fragmentary drafts of the "Propaedeutik" and the "Encyclopaedie," dated October 11, 1811; (3) reports about Esser's "System der Logik," Calcker's "Denklehre oder Logik und Dialektik," and about the paintings of Kuegelgen; (4) drafts of letters: (a) to Goethe, of February 24, 1821 (two different sketches), (b) to Goethe, of August 2, 1821, (c) to Goethe, of September 15, 1822 (these Goethe letters have been published by Dr. Arnold Genthe in the *Goethe-jahrbuch* of 1895), (d) to the Prussian ministry of state concerning raise of salary, (e) to Freiherr von Altenstein and to Prince Karl August von Hardenberg accompanying the "Philosophie des Rechts," (f) to the minister of the interior, Freiherr von Schuckmann, concerning the release of Victor Cousin, who was arrested in Berlin in November, 1824, and, (g) to Cousin; (5) aphorisms—most of them not printed in Rosenkranz's "Leben Hegels" (1844); (6) university reports: (a) draft of Hegel's address on the occasion of his retirement as rector at the University of Berlin, (b) draft of a letter to the Prussian ministry concerning renovation of the university, in which Hegel pleads for a university chapel, (c) draft of a report concerning Dr. F. E. Beneke, whose habilitation at the University of Berlin Hegel sought to prevent; (7) lecture notes; (8) report about final examinations (Abiturienthenauftsätze) at the Brandenburg gymnasium, which Hegel had to read as member of the examination committee; (9) excerpts from various books, newspapers, etc. These manuscripts are deposited in the Philosophical Library in Emerson Hall, and are accessible to students who may wish to examine them.

THE Home University Library of Modern Knowledge, a series of new books, by eminent authorities, at a moderate price (75 cents a volume), and specially written for the layman and student, will be inaugurated this month by the publication, over the imprint of Messrs. Henry Holt and Company, of the first ten volumes. The editors are Professor Gilbert Murray, of Oxford University; Herbert Fisher, of Oxford University; Professor J. Arthur Thomson, of the University of Aberdeen; and Professor William T. Brewster, of Columbia University. Among the first ten volumes, which are to be ready this month, are the following: "The Socialist Movement," by J. Ramsay MacDonald; "Liberalism," by Professor L. T. Hobhouse; "Crime and Insanity," by Dr. C. A. Mercier; and "Evolution," by Professor J. Arthur Thomson and Professor Arthur Geddes.

BRUCE PAYNE, Ph.D. (Columbia, 1905), professor of educational psychology in the University of Virginia, has been appointed president of the George Peabody College for Teachers at Nashville. The old Peabody College has been disbanded and President Payne will have a free field in constructing the new one, which is to have new grounds, buildings and faculty, and one million and a half additional endowment.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE ASYMMETRY OF THE IMAGINATION¹

IT appears that human minds, at least some of them, are blessed with a variety of lights. There is the light of ocular perception, commonly objectified, and usually identified with solar radiance or with that of electricity or that of a burning tallow candle. There is the light of the imagination in which, with or without the eyes being closed, one may behold things that may or may not correspond to things previously beheld in perceptive light and that, following the psychological nomenclature of the ancient atomists, are often unhappily called "images," as if they were given-off masks or copies of objects dwelling and revealed in the light of perception. If the metaphor may be allowed, the rays of imagination's light are not always straight. They may bend, curve, and converge so as to present a view of something around the corner, or of an aspect turned away from the beholder as the opposite phase of a sphere. Every one may know that in the light of imagination things are disclosed whose perceptive correspondents have not been seen and may not exist. Indeed, the geometrician finds his occupation to consist largely in the beholding and contemplation of configurations whose conceptual correspondents may have been previously indicated by analysis as distinguished from spatial intuition, or which may, after their own manner, have just "dawned upon his imagination," without their ever having been clad in ether-reflecting garb or touched by a solar ray. Then there is the light of thought—the light of analysis, whose objects, like number, for example, do not inhabit space—very different from the other two kinds of light, illuminating the way where the light of perception fails, penetrating infinitely beyond the utmost reaches of the light of imagination, knowing no bounds save the barriers and limitations of logic; the beautiful, gray, ubiquitous light it is in which one beholds, suspended in their nakedness and purity, the intellectual structures known as theory, woven of concepts and re-

¹ Paper read before the tenth annual meeting of the American Philosophical Association at Princeton, December 28, 1910.

lationships—the ganglia and netted neural fibers of being—witnessing to the rationality of the human spirit and serving it as types and standards for the criticism and estimate of worlds. That there is a yet higher and finer kind of light, a light peculiar to the higher emotions, a radiance and glory of things not revealed in the lights of ocular perception or imagination or thought—I own to having something more than a mild suspicion that there is such a radiance and glory, but I shall not pursue the inquiry in this connection. Of the varieties of light mentioned, it is that of imagination and that of thought, or rather it is the powers or faculties, imagination and thought, which reveal those lights and the things that dwell therein, it is these faculties that I wish to speak of here.

Some years ago, when lecturing on a hypercomplex of geometric elements in space of fourfold dimensionality in points, I was struck by a strange phenomenon in the field of the imagination. The hypercomplex—call it H —was represented by an equation, as $F=0$. Now four-space is exactly as rich in lines as it is in planes, containing a sixfold infinity of elements of either kind. The ten variables in F were connected by just enough identities to leave the variables equivalent to six independents, and thus to render them available as line coordinates or as plane coordinates in four-space. Accordingly, as the equation, $F=0$, imposed one additional condition on the variables, the H represented by the equation was a configuration composed of a fivefold infinitude of lines, if the variables were regarded as line coordinates, or of a fivefold infinitude of planes if the variables were regarded as plane coordinates: a rather numerous array of elements when taken absolutely, but meager enough in comparison with the total ensemble of lines or planes contained in four-space. The question was, supposing H to be composed of lines, how were the lines distributed or disposed throughout four-space? What sort of configuration was this H ? What did it look like? What was the character of its make-up and constitution? And, supposing H to be composed of planes, the same question was put concerning them. How were the planes distributed? How disposed and related? In a word, H being composed of lines or of planes, what were the properties of H ? To answer, it was necessary to dissect H , to cut it, so to speak, with simpler configurations, and to examine the traces or intersections; that is, to examine the configurations composed of the elements common to H and the cutting configurations. If H as line configuration were cut by certain line configurations C_1, C_2, \dots , the intersections were certain other line configurations $\gamma_1, \gamma_2, \dots$. If H as plane configuration were cut by plane configurations C', C'', \dots , the intersections were certain other plane configurations γ', γ'', \dots . When C_1, C_2, \dots were respectively the same logically, *i. e.*, in thought,

as C' , C'' , \dots , then γ_1 , γ_2 , \dots were for thought, *i. e.*, logically, the same respectively as γ' , γ'' , \dots . In this fact there was nothing to surprise, it was evident *a priori*, for H as line configuration and H as plane configuration are, by virtue of their identical algebraic definition, $F=0$, one and the same in logical make-up, in conceptual constitution, in their character as thought structures. The surprise came when it was observed—and this is the unexpected phenomenon alluded to above—that, albeit the γ -configurations are one-to-one logically identical with the γ' -configurations, the former do not disclose themselves in the light of imagination equally with their correspondents among the latter. A given γ -configuration may disclose itself wholly, partially, or not at all without the same being true, or true in the same measure, of the corresponding γ' -configuration. So that, whilst thought pursued a straightforward course in the domain under consideration, imagination was constrained by its own limitations to a zigzag course. Whilst thought spread its characteristic radiance equally everywhere throughout the fourfold domain, the brighter light of the imagination shone but here, there, and yonder, in patches and spots, like the patines of golden light that of a clear summer day one may see on leaf and ground and tree-trunk in the depths of a thick forest.

The phenomenon ought, it seemed, to be of interest to students of psychology. Its bearings upon other matters may or may not be important. Time, if the matter be followed up, may determine that. The immediate task is to bring the phenomenon into clearer view, to display it, if possible, in a field less remote and less difficult of access than that in which it was first observed, and thus to render it observable and unmistakable to such as may not be prepared to pursue far the ways of geometric interpretation. This task can be performed as follows by the help of considerations demanding but a very slight knowledge of algebraic methods applied to the study of space. It will be observed that the procedure exemplifies the possibility of employing analytic geometry as an instrument for investigating some aspects of the nature and behavior of the human mind. I have no doubt the time will come when mathematical methods will be recognized as an indispensable part of the proper equipment of the philosopher and the psychologist, and when, accordingly, in our colleges and universities there will be regularly offered mathematical courses specially designed for such students. That the applications of mathematics are destined to be confined to fields now conventionally described as the fields of natural science is a belief having its ground in a rather prosaic infidelity respecting the similitudes that penetrate and ally all the forms of spiritual activity.

In the title of this paper imagination is described as asymmetric.

On the other hand, it will be contended that thought, at least in the domain under consideration, is symmetric. What precisely is the meaning of these adjectives as thus employed? The question admits of a perfectly clear answer, as follows: Consider the expression

$$u_1x_1 + u_2x_2 + u_3x_3 + \cdots + u_nx_n + 1.$$

Denote it by the symbol $E(u, x)$. Observe that the u 's enter the expression just as the x 's enter it, it being quite indifferent, owing to the law of commutation here assumed, whether a given u comes before its x or after it. $E(u, x)$ is, on this account, said to be symmetric as to the u 's and the x 's. Next consider the equation, $E(u, x) = 0$. It, too, for the same reason, is symmetric in the same respect. The x 's may be taken to be the coordinates of a conceptual point in a conceptual space S_n of n dimensions. Then the equation, imposing one condition on the variability of the x 's, will represent or define in S_n an $(n - 1)$ -fold infinitude of points constituting in S_n a conceptual space S_{n-1} of $n - 1$ dimensions. It is plain that to two different sets of values of the u 's there will correspond two distinct spaces of the type S_{n-1} . Hence in S_n the u 's may be taken to be the coordinates of the element S_{n-1} just as the x 's were taken to be the coordinates of the point. The two conceptual interpretations, one of the x 's and one of the u 's, are naturally described as symmetric interpretations. Note carefully that, if the u 's be held fast and the x 's be allowed to vary subject to the condition, $E(u, x) = 0$, this equation represents some S_{n-1} as an ensemble of the points contained in it; and that, if the x 's be held fast and the u 's be allowed to vary subject to the condition, $E(u, x) = 0$, the equation represents a point as an ensemble of the spaces S_{n-1} containing it. Naturally these two interpretations, one for the u 's constant and the x 's variable, the other for the x 's constant and the u 's variable, of one and the same symmetric equation, $E(u, x) = 0$ or $E(x, u) = 0$, are to be themselves characterized as symmetric. The same is true of the following pairs of interpretations. If $E_1(u, x) = 0$ be a definite space S'_{n-1} , and $E_2(u, x) = 0$ represent another definite space S''_{n-1} , then the equation, $E_1(u, x) + \lambda E_2(u, x) = 0$, as λ varies, will represent, one after another, the single infinitude of spaces S_{n-1} that have in common the intersection, an S_{n-2} , of S'_{n-1} and S''_{n-1} ; whilst, if the first two equations be interpreted to represent two points P' and P'' , the third will, as λ varies, represent, one after another, the single infinitude of points on the line determined by P' and P'' . Once more, according as $E_1(u, x) = 0$, $E_2(u, x) = 0$, and $E_3(u, x) = 0$ be construed to represent three independent spaces S'_{n-1} , S''_{n-1} , and S'''_{n-1} or three independent points P' , P'' , and P''' , the equation, $E_1 + \lambda E_2 + \mu E_3 = 0$, will, as λ and μ vary, represent, one after another,

either the twofold infinitude of spaces S_{n-1} having in common the intersection, an S_{n-3} , of S' , S'' , and S''' , or the twofold infinitude of points in the plane determined by P' , P'' , and P''' . And so on and so on. Let not the reader falter if as yet he fail to see the outcome, for this will presently be clear.

Let it be noted and borne in mind that the foregoing pairs of symmetric interpretations are conceptual interpretations, interpretations by, in, and for thought—thought-interpretations, as they may be conveniently called. Denote the two of an arbitrary pair of them by $T(u)$ and $T(x)$, according as the u 's or the x 's are constant. Now imagination attempts in *its* way to make interpretations that correspond to—I do not say copy—those made by thought. In other words, imagination seeks to behold in its peculiar kind of light objects that correspond to or match the objects beheld by thought in its own kind of light. And in this function imagination succeeds perfectly if n be not too large, and never completely fails, however large be the value of n . Denote the imagination interpretations corresponding to $T(u)$ and $T(x)$ by $I(u)$ and $I(x)$, respectively. Now suppose that $n=2$; then S_n is a plane. Then, if $T(u)$ is the interpretation of $E(u, x)=0$, $T(u)$ is the *concept* of a range of points, the ensemble of the points of a line, and $I(u)$ is the corresponding object in imagination's light, namely, the so-called "image" or "picture" of a range of points; whilst $T(x)$ is the concept of a pencil of lines, the totality of lines (of the plane) through a point, and $I(x)$ is the "image" of a pencil. Still keeping $n=2$, if $T(u)$ is the interpretation of the equation, $E_1(u, x) + \lambda E_2(u, x) = 0$, then $T(u)$ is the concept: a variable range of a pencil (of ranges) determined by the ranges S' and S'' , and $I(u)$ is the corresponding thing beheld by the imagination; whilst $T(x)$ is the concept: a variable point of a range determined by the points P' and P'' , and $I(x)$ is the corresponding object in the field of imagination.

In order to gain all needed facility in the matter, let us pursue the parallelism in the case that $n=3$. It will be observed that here, just as when $n=2$, the objects presented to imagination perfectly match their correspondents presented to thought, though an object of the one set is as radically different from its correlative in the other as the definition or concept of a type of harmony is different from the harmony itself to a deaf Beethoven. As n is now 3, S_n is ordinary space. If $T(u)$ and $T(x)$ be the thought interpretations of the equation, $E(u, x)=0$, then the former is the concept of a plane of points, the latter is the concept of a point (or bundle or sheaf) of planes, the totality of planes having a point in common; whilst $I(u)$ and $I(x)$ are respectively imagination's correlatives of the two concepts. If $T(u)$ and $T(x)$ are interpretations of the

equation, $E_1(u, x) + \lambda E_2(u, x) = 0$, then the former is the concept of a variable plane of the axial pencil (of planes) determined by the planes S' and S'' , *i. e.*, the total ensemble of planes having a range of points in common, and $T(x)$ is the symmetric of the other, namely, the concept of a variable point of the range (of points) determined by the points P' and P'' , the total ensemble of points common to a pencil of planes; whilst $I(u)$ and $I(x)$ are the things representing those concepts in imagination. Finally, denoting by the T 's the conceptual interpretations of the equation,

$$E_1(u, x) + \lambda E_2(u, x) + \mu E_3(u, x) = 0,$$

the E 's being supposed independent, then $T(u)$ is the concept of a variable plane of the bundle (of planes) determined by the three planes S' , S'' , S''' , and $T(x)$ is the concept of a variable point of the plane (of points) determined by the three points P' , P'' , P''' .

One more step, and we shall have reached the goal. Before taking it, it is essential to note the following matters.

A.—As n increases more and more beyond the value 3, neither $T(u)$ nor $T(x)$ fails in any degree whatever, but both $I(u)$ and $I(x)$ fail in part, though not completely.

B.—For every value of n , $T(u)$ and $T(x)$ are symmetric interpretations; and so, too, are $I(u)$ and $I(x)$, though these two are incomplete for n equal to or greater than 4.

C.—From the fact that the interpretations $T(u)$ and $T(x)$ are symmetric, does it follow that the faculty, thought, which produces them is symmetric or functions symmetrically? No, for there are degrees of symmetry, so that of a pair of symmetric thought interpretations the one might be, as an interpretation, less complete than the other, in which case the faculty, thought, producing them would have to be said to function asymmetrically. Is, then, thought asymmetric? No, it is symmetric. Why? Because the $T(u)$ and $T(x)$ of any pair of symmetric interpretations are *equally*, being absolutely, complete. Is the faculty imagination symmetric? No, it is asymmetric. Why? Is it because for some values of n the interpretations, $I(u)$ and $I(x)$, although symmetric, are incomplete? No, imagination is said to be asymmetric or to function asymmetrically because, for higher values of n , the symmetric interpretations, $I(u)$ and $I(x)$, are, as we shall presently see, *unequally* incomplete, failing, that is, in respect to completeness as interpretations, in unequal measures.

To show this inequality and therewith to establish the thesis of this paper, it suffices to take n equal to 4. S_n is now S_4 . The $T(u)$ of the equation, $E(u, x) = 0$, is the concept of a space, S_3 , of points, and $T(x)$ is the concept of a threefold infinitude, a hypersheaf, of

such spaces—call them lineoids—the total ensemble, then, of lineoids that, in four-space, have one and but one point in common. Now a lineoid of points and a point (or hypersheaf) of lineoids are logically or analytically exactly alike, any system of postulates serving as basis for the geometry of either of them serves equally well for the other, and either of the concepts gives an absolutely perfect and complete interpretation of the equation in question. But now consider imagination's correspondents of $T(u)$ and $T(x)$, namely $I(u)$ and $I(x)$. The former should be an "image" of a lineoid. Now a lineoid, or an S_3 , being naught but an ordinary space, such as that in which we reside, is fairly well, though not completely, disclosed in the light and realm of imagination. $I(x)$, on the other hand, should be the "image" of a hypersheaf of lineoids, a threefold infinitude of lineoids enveloping a single point. But this "image"—and here is the crux of the matter—imagination fails to produce with a degree of completeness even remotely approximating that of $I(u)$. Here, then, in the case of $I(u)$ and $I(x)$ we have a perfectly clear and unmistakable example of asymmetry in the functioning of imagination. And the region we are operating in abounds in similar examples, many of them being even more striking in character. For another example, let $T(u)$ and $T(x)$ refer to the equation, $E_1(u, x) + \lambda E_2(u, x) = 0$. Then $T(u)$ is the concept: a variable lineoid of a pencil of lineoids, single infinitude of lineoids, determined by the lineoids S' and S'' ; $T(x)$ is the concept of a variable point (vertex of a hypersheaf of lineoids) of the point range determined by the points P' and P'' . Here again the thought interpretations are perfect and complete. As to the corresponding "images," $I(u)$ and $I(x)$, no one can fail to see that in respect of completeness or incompleteness as matches for $T(u)$ and $T(x)$, the I 's are widely asunder. A yet more illuminating example is that wherein $T(u)$ is the concept of a variable lineoid of the hyperpencil of a twofold infinitude of lineoids enveloping a line of S_4 , where the corresponding $T(x)$ is the concept of a variable point of a plane, and where $I(u)$ and $I(x)$ are to be the corresponding objects in the light of imagination. It is needless, however, further to multiply examples from four-space, much less from spaces of higher dimensionality. The case is clear. In respect to spatial interpretation the power or faculty of thought is symmetric and that of imagination is asymmetric. The former, as n increases, looks about in spaces of ever increasing dimensionality like a binocular being with its twofold vision unimpaired, its light is spread abroad equally everywhere; whilst the eyes of imagination not only fail as n mounts higher and higher, but fail in *unequal* measure. Its light is but partial and fragmentary, scattered and

suspended here, there, and yonder, like shining clouds in a sky filled and illuminated by a milder and gentler radiance.

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THE THEISTIC READJUSTMENT OF IDEALISM

ONCE the "cardinal principle of idealism" has been accepted as the fundamental doctrine of our philosophy, there are, roughly speaking, four probable views as to the constitution of the universe. First, thinkers may be divided into monists or absolutists and pluralists in respect of their attitude toward the reality of individual selves. And, secondly, as regards their belief in the reality or illusory nature of time, each of these may be classified as dynamic or static, respectively. The majority of historical systems, in their ontological aspects, may then be roughly arranged as belonging to one or other of those four groups, although the epistemological groundwork and historic setting will vary widely in different cases. Similarly the questions of the temporal and eternal, and of the one and the many, have been the leading *causæ belli* of historic philosophy. Both problems were familiar to Plato, the doctrine of ideas, as developed in the earlier dialogues, representing an attempted solution of both in the light of a single systematic principle.

Now these problems again reappeared when the early apologists of the Christian church turned to Greek philosophy in the search for a rational confirmation of the dogmas of their faith. Those dogmas had sprung from a Hebraic and instinctive source, and the simple conviction of the nearness, the omnipresence, of God, which, as Renan has shown, formed the content of primitive Christianity, now came under the influence of the speculative tendencies of the Hellenic mind. Accordingly, various new readjustments of speculative philosophy occurred, always conditioned by the reality of a divine being and an order of things other than the kingdom of this world. These readjustments, however, always took place in terms of the fundamental questions we mentioned above, and the dogma of the Trinity is an example of the result.

Such was the intellectual atmosphere prevalent throughout the Middle Ages, after which the revival of classical culture and the rise of the natural and mathematical sciences attracted attention once more to the temporal and dynamic, and opened afresh the controversy as to where finality might be found. From that time onward the fundamental problems of philosophy, from a strictly metaphysical point of view, have remained the same, though their solution

may be frequently changing in terms of the more general intellectual environment.¹

With the culmination of the scientific awakening in the philosophy of evolution, it seemed for the moment as if the whole idealistic attitude with its peculiar difficulties had been doomed, and it became the latest task of philosophy, particularly in its religious affiliations, to save itself from this new interpretation of the world. There seemed to be no disputing the facts of evolution within the scientific sphere, but their significance for philosophy was a matter of much debate. The evolutionary attitude, if we look at the matter historically, conflicted with the whole previous idealistic and religious character of philosophic thought, which had developed from Greek and Hebrew origins.

Fresh solutions accordingly arose, attempting to assimilate these new generalizations of science, and other combinations of the fundamental dogmas of historic philosophy took shape. There occurred, in effect, a readjustment within the idealistic camp—a fresh mobilization of its forces, by which it might at once retain its contact with the past and yet ward off destruction in the present. The seeming reality of a fluctuating temporal world had been thrust upon us by the evolutionary interpretation of phenomena, and yet the epistemological groundwork of idealism derived from Kant gave us a world of noumenal selves, and the demands of the religious consciousness would not permit us to lose faith in the traditional theistic tenets of Christianity.

The idealistic readjustment to which I refer—this newer systematic solution, whose adherents form a somewhat influential party in the intellectual chaos of to-day—is the philosophy of theism, best represented, at least so far as our own country is concerned, by the standpoint of personal idealism, notably that of Professor Howison. Perhaps personal idealism and its close relatives are the only distinctly theistic systems in the field to-day, so general is the sway of absolutism in the idealistic camp. And so thoroughly dogmatic are its adherents that it is fortunately less difficult than in the case of certain other writers to mistake the basis upon which it stands with respect to the prime questions of philosophy we mentioned above. As answer thereto, this philosophy gives us two pluralisms, one static and one dynamic, and in addition a wholly static deity or final cause of a veritably Aristotelian stamp. We have, in one system, a world of noumenal selves, a pluralistic but phenomenal world developing in time toward a noumenal goal by a process “we have in

¹ Might not the most rabid humanist admit that it is not the problems of technical philosophy, but only the methods of their solution, which change with new conditions—political and social—of active life?

these days learned to call the process of evolution," and finally an unchanging personal God, the moveless One by whom all things are moved. I wish to say here a few words upon what appears to me to be the untenability of such a position as the fundamental tenets of this system involve, and to suggest that this particular type of metaphysical readjustment is not that which is capable of retaining the traditional theistic convictions of the religious consciousness in the presence of hostile philosophies.

In the first place, for the explanation of change in time, no such bifurcation of the world as this system proposes seems to be required. If there is a changing world, however "conditionally real," why should we suppose there is any other? For if, as I understand Professor Howison at all events to maintain, time is infinite and the evolutionary process without end, then, since the noumenal state is never reached, it might, so far as human experience is concerned, never exist at all. It is, as the pragmatist would say, a conception of no cash value in experience. If, however, the temporal process has a goal to be attained, then we face the enigmas as to how the phenomena can be changing to a state of changelessness, and how a state of existence can be left behind which is itself the condition of the possibility of its being so left. With Schopenhauer, we might cry, "Ah, pity we did not begin sooner, for we should be already there!" If, finally, the changeless—the "essential thought—correlation of minds"—is the real, and about the temporal there lingers some suspicion of unreality, then we fall into fresh difficulties, with which we deal below, while the problem of the relation of the two is also no nearer solution than before.

"Strive as one may," writes Professor Howison,² "there is no escape from Kant's implication that not even evolution can produce time in our consciousness. . . . There is for the evolutionist no escaping from Kant's clutches, except he maintain either that succession can exist without time, or else that time is *per se* itself a thing, instead of a relating principle for things. If he takes the former alternative . . . he will have to tell what, in that case, succession intelligibly is. If he takes the latter, he will recede into antiquated metaphysics, which talks about existence *per se*, out of all relation to minds, and which, at any rate in respect to the nature of time, received its quietus in Kant's 'Transcendental Esthetic.' "

Such is the irony of history that it remained for an immediate follower of the author of these lines to embrace the former alternative in attempting to justify the conception of a "pure succession" or "timeless change."³ But if, with the radical empiricists, declin-

² "The Limits of Evolution," second edition, New York, 1904, p. 20.

³ H. A. Overstreet, "Change and the Changeless," *Philosophical Review*, Vol. XXIII., No. 1, p. 1.

ing to distinguish between a thing and the relating principle for things, we assume that time comes, as James says, "in drops," and embodies relations as given in each pulsation of thought as far back in the flux of experience as we may choose to go, do we thereby "recede into antiquated metaphysics, which talks about existence *per se*, out of all relation to minds"? Only, I should suppose, upon the gratuitous assumption that there must exist a distinction between mind as in or identical with the process and mind as above it—between, that is, the temporal and eternal selves. That some such distinction is made by Professor Howison seems evident from his speaking of evolution as *producing* time in our consciousness, if by "produce" he means "originate," and the alternative assumption that evolution *is* time in our consciousness seems at least equally admissible. Clearly, however, the whole question is as to the reality of that noumenal mind, and to produce that mysterious entity as the chief weapon in an argument which is intended to assure us that no other supposition save that of its existence can be deemed acceptable, is surely a reprehensible, if not uncommon, form of reasoning.

Similarly, Mr. Bradley writes,⁴ "If you take time as a relation between units without duration, then the whole time has no duration, and is not time at all. But, if you give duration to the whole time, then at once the units themselves are found to possess it, and they thus cease to be units." No doubt, but would the universe be much worse off if they did cease to be units of such a remarkable character as that,—units, I mean, of no duration? You can not generate a line by compressing points, but who, except Mr. Bradley, is under the obligation of constructing our flowing universe from elements which simply will not flow? May we not say with James⁵ that "everything which happens to us brings its own duration and extension, and both are vaguely surrounded by a marginal 'more' that runs into the duration and extension of the next thing that comes"?

However, the question of time and eternity for its own sake is not that with which we are mainly here concerned. Of the "Obsolescence of the Eternal" an abler pen has written recently. Waiving, therefore, the difficulties arising from this source, let us grant the hypothesis of noumena as ends or standards of evolution in phenomena, and ask if these be compatible with traditional theistic theology, and if the latter find here a justifiable defense. Then, since the consummated differentiation of persons *sub specie aternitatis* is sufficient to give us a world of ultimate perfection and timeless self-activity, the combination in one system of an attractive deity, an "impersonated ideal," and a world of mutually determining "per-

⁴ "Appearance and Reality," second edition, London, etc., 1908, p. 37.

⁵ "Pragmatism," New York, 1909, p. 177.

sons other than God'' seems to supply more entities than are required to account for evolution in phenomena.

To begin with, the conception of grades of perfection, necessitated by the differentiated and most perfect deity, is hard to grasp, and leads to further complications beyond its intrinsic ambiguity. If, by reason of my original definition of myself as a member of the eternal "City of God," the utmost achievement of the phenomenal I is the attainment of perfection inferior to God's, then either the evolutionary process would appear to be still incomplete, or else my noumenal self, representing the greatest perfection by me attainable, would be a sufficient guide upon my phenomenal path, without the supposition of a more (most?) perfect final cause. To allege, at this point, that the variety of our graded noumenal perfections implies the complete standard of perfection is but to restate the difficulty. A criterion unachievable would surely be unknown, or, if knowable, would leave an irrational incompleteness in the consummated, but relatively imperfect, noumenal selves. Grades of perfection granted, such a standard might be as logically necessary with reference to noumena as are the latter with reference to the evolutionary selves; but that very necessity, since the standard is in other respects self-contradictory, is sufficient to show that grades in noumena are impossible. A universe where the necessary is irrational, where the ideal is, for the many selves, unreal since unachievable, is not that which any idealistic pluralism could uphold. "Their common aim of fulfilling their one rational ideal" would be a chimera indeed.

Not grades, but varying types of perfection, it may now be said, are what are posited of persons as noumenal. We thus have a differentiated plurality of goals, without the contradictory implication of less and more, and where the whole personality of every individual is absorbed within his unique type of self-activity. God must then be conceived as either one such type or as the unity of all such types in one activity.⁶ In the former case, his rôle as final cause, as an attracting criterion, must surely disappear. This is indeed the "finite and pathological God" of Schiller, whom the personal idealist especially eschews, or James's "experiencer of widest actual conscious span."

But if God be conceived as the totally active, that is, as the unity of all such types, then we either predicate of such unity a per-

⁶ Professor Howison at one time speaks of God as the "fulfilled type of every mind," and again of his "being included in the circle" of timeless selves. Perhaps the distinction we here make has not, therefore, occurred to Professor Howison, but whichever alternative may be adopted, the sequel will attempt to show that the conception of types of perfection is no more theistic than that of its grades.

fection not embraced in any single type, and return once more to grades of perfection; or otherwise destroy the rôle of differentiated types of activity as descriptive or explanatory, respectively, of the world of noumenal reality and of the world of imperfection and change. Like Royce's "eternal now," such a unity of types finds psychological verification, as, for instance, in the mind of any dramatist, and it might be said to act as a clearing-house, so to speak, for spirits seeing all activities in God, the self-activity of each being only possible as defined in terms of the activities of all. This is, in fact, what has happened to personal idealism at the hands of Professor Overstreet, who has used for such types of self-activity the term "cosmocentric self."

But one does not see that such a position is theistic at all; being essentially that of McTaggart, whose interpretation of Hegel is atheistic, as he himself rightly avows. For in becoming the bare fact of an organic unity—a mere safeguard against a chaos of isolated monads—the deity has really vanished altogether, so far as his independent personality is concerned.⁷ It is not easy to see how it should be necessary (or even possible) for me to have my unique function or type of perfect self-activity reflected in a being whose nature is embracive of all types, before it can be appreciated by other individuals. For if the absolute unity of types is self-active, then in appreciating his activity alone we *ipso facto* appreciate the activities of all. Others may then be dispensed with or themselves become passive throughout, and there remains only a solipsistic deity whose very attempt at self-differentiation would be incomprehensible. But if, on the other hand, the unity of types is a passive reflection of our activities, then again we must either dispense with him or deny self-activity, even timeless, as the nature of the real. Besides, if such a unity of types were possible, why should "persons other than God" be restricted to a single variety? If Shylock became endowed with self-activity as an ultimate type of personality, he would cease to be the product of Shakespeare's mind, and would not require Shakespeare's synthetic grasp of the whole drama which forms that epoch of his life in order to appreciate his daughter's lack of gratitude. Contrariwise, if Shakespeare's mind views its creations as differentiations of itself, then they cease to have self-activity or to be in any wise ultimately real. Possibly this last conception is tenable, and it is perhaps the type of monism of Royce, but it certainly does not leave room for a world of free personalities, noumenal or otherwise,

⁷ Dr. McTaggart's "Further Determination of the Absolute" reads more like its "Final Annihilation," nor can one see upon what grounds he continues to speak of *The Absolute*.

from which, as data, we set out. Even if some kind of deity be so secured, the world of selves has surely disappeared.

In short, if we are to maintain the hypothesis of a static pluralism as the ground of change in time—supposing this itself were possible—we can not at the same time entertain belief in a personal God. The system attempting this endeavors to accomplish too much at one stroke, nor does it appear possible that theism can justifiably find its champions in that school. Whether it be that the old beliefs are slipping from us, I do not know, but I contend that their defense must take other shape than this, and that the readjustment of idealism here discussed is not that which will synthesize the old and new.

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DISCUSSION

IS CONSCIOUSNESS "A TYPE OF BEHAVIOR"?

PROFESSOR SINGER'S article entitled "Mind as an Observable Object" in this JOURNAL for March 30 provokes reflection on the function of paradox. That function, surely, is to rouse thought, not to conclude it; to give us intellectual impulse, not intellectual satisfaction; to launch our minds, not to bring them to the landing-place. It is a function of importance. But to be content with our paradox is to forget the journey's end.

Professor Singer tells us that "consciousness is not something inferred from behavior, it is behavior. Or, more accurately, our belief in consciousness is an expectation of probable behavior based on an observation of actual behavior, a belief to be affirmed or refuted by more observation, as any other belief in a fact is to be tried out." I will not offer a summary of his argument, but will suppose that the reader has taken the opportunity to acquaint himself with so clever and (but for the essential disappointment) so charming an article. The essential disappointment springs from this: that Mr. Singer rouses us and does not in the least degree appease or satisfy us. He launches us and leaves us at sea.

The reasons why we say we find something in the world of facts which we call consciousness and which distinguishes itself from a behaving body he really does not consider. These reasons are after all simple. Let us try as nearly as may be to take Mr. Singer's point of view. Let us try to state the reasons without the terms of personality, self, etc. For example, at a single moment a certain number of objects, or more or less distinct aspects of objects, are in a

peculiar sense *together*, while those objects and other objects are not in this sense together. One looks across the room, and at a single moment of one's looking certain portions of the wall, the rug, the table, the sofa, are *conjoined*. They are, as the phrase is, "in one field of consciousness." Meanwhile the rug and the window behind me are not in this sense conjoined. Of course the easiest way of putting this is to say that *I am seeing* the first-mentioned combination, and *I am not seeing* the window behind me. But it is quite easy to avoid making these references to self and its "seeing": it is quite easy to put it in terms of the "objective" facts themselves. These facts have a way of being *together*, some of them, while others are not in this sense together.

What this relation turns out at last to be; whether it will involve reference to a third thing, a separate existence called mind, which "turns its search-light" upon certain objects; whether it may be simply a superadded tie between things themselves, which keep at the same time all their physical qualities undisturbed thereby; whether or no it means that when the same object is at once in many differing groups (that is, when many people are looking at it) there must be as many copies of it as there are "groups": these are queries that must not be permitted to distract us from the irreducible minimum of our thesis. Groups there are, and breaches between them there are. Consciousness there is, and oblivion there is. "Consciousness" here is not behavior; it is, according to usage, either the "field" itself or the relation of conjunction between the components of the field.

Clearly this state of being together depends on the relation of the facts to the body of what we call the observer. It depends on that relation, but of course it is not that relation. The relation of those objects to the body of the observer is something that physical science is prepared to discuss in full. But the relation of being together or not being together in the sense just stated—that is a term of thought with which physical science never has any concern. It is a term of thought that does not appear in physical science. We can discuss all the relations of "observable objects," organisms and others, and so long as we are discussing them as observable objects, not as actually observed objects, we have simply no use for this term of thought. Even discussing them as actually observed objects, if by "actually observed" we mean standing in certain relations to the retinas or other sense-organs of a neighboring body, we have no use for the conception. It is only when observedness is taken in a different sense, that is, precisely in the sense above described, and from the point of view of the observer, that it brings into thought the fact of objects *being together* or *not being together* in this peculiar manner.

It is these pools of conjoint phenomenality that Mr. Singer completely ignores. I do not mean that he fails to explain their existence. This is not a question of explanation or cause. I mean that he fails to recognize their existence. This is a question, not of accounting for consciousness, but of observing its real character in the world. If mind is an observable object we must not allow its most essential characteristics to escape us.

It may indeed be truly said that this relation is not *at first* brought into an observer's thought. Whenever I perceive, it is by the nature of the case the objects that *are* together that appear before me—for being together and appearing before me are one. It is only when I am forced to contrast the relation of the objects conjoined to each other with the opposed relation between objects not conjoined that I begin to see what conjunction is.

Suppose now that I observe an observer; I look at the body of some one who is looking at objects before him. Unless his eyes look and his brain acts, the group of objects in front does not "appear" to him. Does his brain in some wise generate or physically parallel a picture of the objects? Is it in that picture that his vision consists? If so, is it possible to describe this mental picture as a "type of behavior" of cerebral molecules? These questions or the like are what some would put to Mr. Singer. I do not put them. I wish to avoid dubitable assumption and the dread and endless serpent-coils of metaphysical controversy. I ask him only to recognize the fact called "a field of consciousness" (excluding and including) which is not a topographical division of things or a physical segregation at all.

Of course there are other questions one might ask. One might turn to those phenomena in consciousness which are not commonly called objects. In what sense is the sting of another's pain an observable mode of behavior of his organism? How can "our belief" that a friend is now suffering pangs of grief be identical with "an expectation of probable behavior"? On this question of content, as on the other question of isolation, Mr. Singer gives us no perceptible light. He not only does not prove his paradox, he takes no steps to prove it. His trumpet sounds the charge so lustily, however, that if the night is sufficiently dark the enemy may surrender under the impression that he is overwhelmed.

In the face of what is so purely a night-attack, all that we want is more illumination. Mr. Singer's previous work is our surety that he will have abundant answer ready for such queries. I do not know whether I shall be so fortunate as to elicit his explanations, which I desire for the sake of my own insight into an intricate problem. In

any case, by way of defining my difficulties more fully, I will touch on some of his incidental remarks.

It is so far from self-evident that each man's mental state is his own indisputable possession that no one hesitates to confess at times that his neighbor has read him better than he has read himself. . . . No one finds fault with Thackeray for intimating that the old Major is a better judge of Pendennis's feeling for the Fotheringay than is Pendennis himself.

This is not a question of knowing our feelings, but of knowing how our feelings will develop or continue. To have a feeling and to be acquainted with it are the same thing. If a man does not know whether he is in love, it means that he does not know whether what he actually feels is or is not a sign of a continued disposition to feel and to act such as goes under that name.

It is quite as likely that, under certain conditions, I do not know what red is, as that, under other conditions, I do not know what love is.

This is not a question whether I am acquainted with my own sensation, but whether I am acquainted with the social name for my sensation.

You will ask me: What aspect of the behavior of certain objects leads us to call them conscious? I answer, I do not know, and expect never surely to know. Had I been asked: What aspect of the behavior of certain objects leads us to call them alive? I must have returned the same answer. . . . But though I don't know what life means, nor what consciousness means, I feel that I know how we may go to work to find out these things, if once we see that neither stands for an eject forever veiled and hidden in the land beyond experience.

Once more, the question what leads me to call a man conscious, and the question what consciousness means—is Mr. Singer assuming that they are the same question? Are the nature of a thing and the tokens by which I infer its presence the same? As to the land beyond experience—that is, my own present experience—is there no such land? What of my own past experience? What of those past experiences which I feel sure I had but can not now recall? If it is not my own present experience which is meant, but experience in general, then the "ejective" experience of another lies within the land of experience and not beyond it.

Men had courage to say, "Heat is not something inferred from the heated behavior of a body, it is that behavior. A hot body differs from a cold body only in the way its parts move." The mystery had vanished.

Mr. Singer is not here carrying on his main thought, but referring to what he regards as an analogous problem. But his passing words give us pause. Is the perceived quality of heat—as individual a concrete fact as the perceived color red—nothing but the way certain particles move? If not—if the perceived quality of heat is not this, but objective "heat" as meant by Mr. Singer is this,

then the perceived heat is not the behavior of the body called hot. In that case perhaps the perceived heat is something in our consciousness. Then, by the theory, it is nothing but the way our own body moves, or the way certain particles of it move. But how can perceived heat or red color be identical with the change of place of particles of any body whatsoever? They can not; any more than what we mean by perceived heat can be red color, or than what we mean by red color can be perceived heat.

The truth is that Mr. Singer and some of the vigorous and enterprising new realists, to whose thought his own seems allied, play with our best hopes and dash them in a somewhat unfeeling manner. A more pregnant and momentous proposition in philosophy than this, that consciousness *can* be resolved into the behavior of organisms, it would be hard to produce. Of such stuff is great discovery composed. For such a stride forward in metaphysic, such a stride of arrival and of escape from perplexity, all open minds are looking. We give our best heed at once. How can consciousness be so resolved? How can the old obstacles be surmounted? Here, alas! Mr. Singer and his school begin to talk of something else, such as the assumptions of idealism (I am not arguing for idealism), or of "English sensualism," or they mention that their philosophy will come to our difficulties after a while. Perhaps they say that they have not yet reached the category of consciousness, which is a late and secondary product. In that case they can hardly have arrived at the proposition that consciousness is behavior. Indeed, in some of the programs, platforms, and preambles of the new realism we are left to infer that the proper method is to come to conclusions, and then brace ourselves to meet the problems whose solution alone could warrant any conclusion on the subject. We are informed of the conclusions of arguments that can hardly be said to have begun. Is not philosophy heir to any of that spirit of cautious and plodding verification for which the name of Darwin stands?

If there is wide change in the tendency of philosophical opinion in these years, it is not because circumspect reason has at length rejected old ideas. It is rather because philosophy has lain a long while on one side and wants to turn over. Just when we are wishing as citizens to put forth the hand of science to steer society and institutions in some degree and deliver them from the blind tides of wilfulness and custom, just then it is that we wake up to see the same tides heaving in the sciences. What shall deliver the deliverer himself? Nothing but a taste for real solutions—which is the same as intellectual scruple. Nothing but common sense untried—which is the same as pertinacity in logic. Nothing but looking about us before we advance—sweeping the horizon of our subject—circumspection;

that last rule of Descartes's method, followed as far as human vision can, "to make enumerations so complete and reviews so general that I might be assured that nothing was omitted."

These fragmentary notes are not written with a destructive intent—as little as they are likely to have any destructive effect. I am by no means sure that on this matter Mr. Singer has not in reserve something indestructible. They are written to elicit, directly or otherwise, the fuller thought which must lurk behind; and to emphasize the cardinal principle which we may one and all devoutly repeat to ourselves as we clutch our reason; the principle laid down by the old lady in "Middlemarch" or "Daniel Deronda": "We must all make a little effort every day to keep sane and use words in the same senses."

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REVIEWS AND ABSTRACTS OF LITERATURE

Notes on the Science of Picture Making. C. J. HOLMES. New York: D. Appleton & Co. 1909. Pp. xxiii + 317.

The diffident title of this book does more credit to the modesty of its author than justice to the significance of its contents. Mr. Holmes is the successor of Ruskin. He holds the Slade professorship in fine arts at Oxford, Ruskin's old chair, but fortunately there is no sign in the book that he holds also Ruskin's outlook and Ruskin's idiosyncrasies. Writing in an unusually lucid, easy style, he approaches his problem with an openness of mind and a sanity of view as extraordinary as significant in the curious anomalies of contemporary criticism of art. Keeping, with professorial naïveté, to one or two inept and even clumsy usages, as where he says "infinity" when he means "suggestiveness," Professor Holmes nevertheless manages to point out with absolute clearness the most obvious, and hence most unnoted, aspects of the rôle played in painting by "design," "material," and "character." His exposition is preceded by a notable introduction, the point of which is to assert the commonplace, and hence to critics and the half-educated, the startling, fact that there is no one, single, indivisible, absolute beauty of objects—estheticians and philosophers to the contrary notwithstanding. "In spite of all the mighty names connected in one way or another with the criticism of the fine arts, we have still no fixed standard for passing judgments on pictures already existing; much less such a system of training the intelligence as will save us from making blunders as to future productions. . . . In esthetics we seem still to be as far from . . . unity as were men of science three centuries ago." The comment is as kindly as it is just, for conceivably worse things might have been said about esthetics—it might have been accused

of irrelevancy, artificiality, and gross stupidity, not merely of discord. One must, of course, bear in mind that Professor Holmes means by "fixed standard for passing judgments on pictures," a technological and professional standard, not a psychologic and evaluative one. The latter, as yielded in the nature of the "esthetic experience," has been correctly defined in its essentials since Plato. The mistake has lain in trying to derive from *it* the nature of its conditions, *i. e.*, the "causes" of constructive art; for the experience is derivable only from the conditions, not the conditions from the experience.

The two fundamental requirements for excellence in painting Professor Holmes holds to be "emotion" and technique. Mere technical power tends to make a picture clever and empty; mere emotion will make no picture whatever. Theories of painting, as against manual skill and vigorous insight, are of secondary importance. They are in any event contingent on the medium used and the subject-matter to be presented. Pictures can not be made according to absolute rules; rules have to be accommodated to pictures. Now the content of these pictures must not be photographic, but "designed," invented, imagined; not, however, irrelevantly, but in terms of nature. Nature is to be used, but not to be imitated. As Whistler wrote in the "Ten O'clock," "To say that nature is to be taken as she is, is to say to the player that he may sit on the piano."

The content of pictures, then, being abstracted from nature for the purpose of portrayal with technical perfection and spiritual fervor, will exhibit in those pictures at least four qualities "which all fine pictures in some degree possess, of which mediocre pictures lack at least one, and of which bad pictures lack at least three." These qualities are unity, vitality, infinity and repose. Their presence depends upon pictorial design, *i. e.*, on emphasis of this or that "value," subject to pictorial conditions determined by "symbol," place, spacing, recession, shadow, color, material. "If unity may be said to give a painting coherent structure, vitality to inspire it with the breath of life, infinity to redeem it from shallowness, repose may be said to endow it with good manners."

This imposing array of terms, contrary to critical usage, really means something, collectively and severally. I am not sure that in the first instance they may not be reduced to two or at most to three, for certainly there can be no repose in a picture without unity or coherence, without an integration and balance of parts, and when a picture has such an integrative repose it has unity. Nor does the difference between vitality and infinity seem altogether irreducible. The "sense of life in a picture," or vitality, is hardly distinguishable from the "element of uncertainty or evanescence in spacing, in tone, in color, or in line," *i. e.*, infinity. For if Professor Holmes means by infinity only delicacy and refinement, and by vitality only vigor, these two qualities can not be present in one coherent pictorial unit at the same time. If, however, "infinity" means just that suggestiveness which is due to the cumulative effect of vigor and vitality which subtlety of rhythm, coloration, etc., yield, the two are identical; "vitality" being only a term for the more obvious aspects of the "infinite" variety. From this point of view, the qualities required in a

picture are unity and vitality, and these are permanent in so far as they are pervasive. Then in the first case they give "repose," in the second "infinity."

The materials to be used in the design which should possess these qualities are denoted by the second set of terms. By "symbol" Professor Holmes means "devices or signs used by the artist to convey his meaning, or to transmute natural phenomena into terms of art"; by plan, "the surface disposition of the lines and masses in a picture"; by spacing, "the proportions masses bear to one another"; by recession, "the apparent nearness or remoteness of the objects contained in a picture." Shadow, color, and material carry their ordinary significance. This classification is rather over-empirical, and is capable of reduction, but it has the technological advantage of considering coincident aspects of a picture separately. The rest of the chapters under the heading "Design" are devoted to showing how each of these elements may best contribute to the four necessary qualities of great painting. Space does not permit a detailed review of this sane and interesting study. One can note here only the rather haphazard treatment of the subject, and the omission of any consideration of the synthetic effect of these pictorial elements. For a picture conceivably painted with especial reference to each element, and resulting in each case in a particular perfection, may yet be a bad picture. A series of excellent details may make an abominable whole, as any observer of modern painting knows.

From the study of design Professor Holmes passes to the study of materials. By materials he means the physical content of the painter's instruments of expression. These are distinguished as processes of drawing, engraving, and painting. Drawing may be done in silverpoint, pen and ink, pencil, chalk, pastel, charcoal, and with the brush. Silverpoint will give delicacy of tone, etc.; pen and ink, spirit and sharpness; pencil and chalk, precision of form and gradation of tone; pastel and charcoal, which are modern favorites, will render excellently shadow, strength, and light; while brush-work, which is in execution a process of painting, and in results has the effect of drawing, renders best of all the quality of swiftness.

Under "Processes of Engraving" are discussed the execution and effects of wood-engraving, engraving on stone and on metal. Of the three the first gives the effect of mezzotint; the second, favored by Whistler, has since been commercialized; the third, according as the engraving is done with a tool or with acid, renders a firm and austere line, the trivial results of "stippling," the rich, extravagant individuality of "drypoint," the reproductive accuracy of "mezzotint," or the subtler effects of "etching" and the flat values of aquatint.

The discussion of the methods of painting is bound considerably to interest both lay and professional readers. Professor Holmes distinguishes them as the "transparent method," the "mixed method," and the "opaque method." By the "transparent method," "pigments are used thinly and depend chiefly or entirely for their effect upon light reflected from a luminous ground. The mixed method depends partly upon light

reflected from the ground, and partly upon light reflected from a solid body of pigment," while "the opaque method depends entirely upon light reflected from the solid body of pigment." The latter method is modern and was introduced by impressionists; the mixed method was universally used from the early part of the sixteenth to the latter part of the seventeenth centuries; the transparent method was employed by the very early Flemish masters, the pre-Raphaelites, and some moderns like Orchardson. The elucidation of these methods is assisted with references to the work of De Chauxvannes, Watts, Teniers, Gainsborough, Millais, Rubens, etc., and it is put in such a way as to help the worst Philistine toward the appreciation of painting.

The book concludes with a discussion of "the painter's aims and ideals" and the refutation of "some popular fallacies." Professor Holmes distinguishes four classes of paintings—dramatic, lyrical, narrative, and satirical. The first represents a crisis, the second a mood, the third is descriptive, the fourth ridicules. "In practise the groups are usually fused and blended, so that the great majority of easel pictures are not typical of any one group, but should be described as hybrids." This conclusion is as objectionable as the classification. It is as if a naturalist were to say that an animal which is not all legs, or all head, or all body is to be described as a hybrid. As, according to our author, the painter's ideals are defined by the classes his pictures fall under, the painter's mind must also "be described as hybrid." In point of fact the organic unity into which the contents of a good picture are welded justifies and defines those contents; not they, the unity. It is extraordinary that Professor Holmes should have failed to see this, just as it is extraordinary that he should have failed to see the artificiality of his historic division of "art periods" into savage, despotic, individual, and socialistic. So far as the artist himself is concerned, art remains, as our author insists it must, "individual"—*i. e.*, springing from the vital impulse and technical perfection of the artist himself and directed upon whatever task he may have in hand. This is suggested by the summing-up. "The great painter . . . must be at once an individualist and a servant. An individualist because it is unlikely that there is a tradition in which he can profitably allow his personal talent and character to be submerged . . . a servant, in that he must fulfill certain decorative conditions, settled neither by himself, nor usually by his rulers or patrons, but by the habits and customs of his age."

To this dual purpose art education has, in the just opinion of Professor Holmes, failed to contribute anything. Artists begin their careers by aiming for precision, reach its middle point by aiming for "greater breadth of mass," and at its end lose "freedom of brushwork, and a disregard for all minor details." It is right to base our current system on this "generally recognized course of development," but results have been very poor. Our author now analyzes the career of Raphael, Titian, Turner, Rembrandt, etc., and concludes that artists are born into a tradition which they continue or, if not, which they create and develop to a maturity that is their own and the tradition's. Their crisis is at the middle of life, not at its beginning. The only salvation during the crisis

is continual experimentation. The growing painter will "only in early manhood and middle life imperatively need some time of solitude in which to think out the problems of his profession and it is just then that the pleasures of the world are wont to be most importunate and most acceptable." The future of painting will depend partly on this freedom at middle age, mainly on the decrease in number of purchasable "treasures of the past," on the framing of pictures, on the exercise of rigorous selection on the part of the artist, and on his power to deviate just enough from accepted tradition to be fresh without being foreign. What is fundamentally demanded of him is that he shall not give way to popular prejudice and sacrifice "decoration" to "significance" or *vice versa*. He must be neither a carpet-weaver nor an illustrator; he must be an artist, *i. e.*, he must give his picture a decorative quality "fitting that picture alone, arising naturally out of the particular thoughts and things with which it deals, and incapable of being transferred wholesale and applied to some other subject." And this, pictures can not be by being mere decorations in spots or colored photographs. Neither "values" alone nor mere "finish" determines excellence; it is determined by the right use of these as instruments of high emotion. A good picture is "personal experience emphasized by emotion in terms of decoration."

H. M. KALLEN.

HARVARD UNIVERSITY.

The Harveian Oration on Experimental Psychology and Hypnotism.

GEORGE H. SAVAGE. London: Henry Frowde. 1909.

Dr. Savage's oration is of interest to American science, not because the address makes a substantial contribution to our knowledge of experimental psychology or of hypnotism, but because it may be regarded as an index of the stage of development of British medicine.

About half of the oration Dr. Savage devotes to a sketch of Harvey's life and times. Seventeenth-century England contributed little intelligence to medical science. The separation of the medical profession from the enervating control of the church had only begun, with the result that human ailments were still given a "spiritual" interpretation, and their cure was still sought in charlatanism, legerdemain, and witchcraft. Harvey, who was regarded as a crack-brained iconoclast because of his independent methods of investigation and his original theories, and who, notwithstanding that fact, displayed unceasing tolerance, was an oasis of exemplary fertility in an arid desert of ignorance and superstition. Despite the lack of sympathy of his contemporaries, which at times amounted to hostility, he concentrated his energies in the service of scientific truth with unwavering industry and unusual singleness of purpose. He had but one aim—to know nature—and but one principle—to believe all those conclusions, and only those, to which his reason led him.

Such open-mindedness Dr. Savage urges his professional brethren to entertain toward experimental psychology and hypnotism. Too prevalent is the feeling in the profession in Great Britain "that experimental psychology is hardly likely to reward those who are devoting their lives to it

... and ... that men of promise are wasting their energies on what will be of little service either to psychology or to medicine." Too general he finds the belief that hypnotism is some sort of "faith cure." Experimental psychology is of importance because it "has shown us how to measure definitely the reactions of the senses to their surroundings, and at the same time it has shown us how readily some of the senses may be deceived, leaving us with an open mind for things at present undefined"; and because only patient experimental research will reveal the complicated variations of human personality.

Hypnotism, which Dr. Savage seems to regard as identical with psychotherapy, he believes to be of general scientific interest and of particular value to medicine. The objections that hypnotism is "mysterious" and "dangerous" he dismisses as irrelevant, inasmuch as all treatment contains an element of mystery for the patient, and as hypnotism has proved, when used intelligently, to be of considerable therapeutic value. Many facts concerning hypnotism have already been established. Physical sensibility has been both suspended temporarily and heightened by its use, and such mental functions as memory have been stimulated. It has been useful in alleviating pain, in producing sleep, and in surgical operations. It has done exceptionally good service in the treatment of mental obsessions.

The aim of this oration—to dispel the conservatism that befogs the British medical mind—is certainly commendable. The substance of the address, however, is rather meager. In the section devoted to experimental psychology no distinction is made between the abnormal and the normal branches of the science. No mention is made of the many facts established by the researches of Bernheim, Binêt, Janêt, Freud, Prince, and Sidis in the one field, or of Wundt, James, Ebbinghaus, Lange, Münsterberg, and Titchener in the other. All that we find is a few matter-of-fact statements about the privacy of one's mental states or the fundamental unity of the sensations, which statements, in addition to being commonplace, are so scant in content as to total only four out of the forty-four pages that comprise the printed copy of the oration. The section on hypnotism, though lengthier than the one on experimental psychology, is largely historical or generally descriptive in nature. Dr. Savage endeavors to emphasize the therapeutic importance of hypnotism by citing actual results; but so embryonic is psychotherapy in England that he is able to summon to his aid only such facts as are patent to the average-continental or American psychopathologist.

The condition of psychotherapy in Great Britain—judged by this oration—is little short of deplorable. It is not that Dr. Savage is not sincere and open-minded enough. The difficulty is with the rank and file of the profession who are so conservative that a Harveian oration must degenerate into a plea that scientific men should not reject new truth simply because it is new! May his sincerity fertilize the sterile soil upon which he has strewn rather unpromising seed!

M. J. WESSEL.

JOURNALS AND NEW BOOKS

MIND. January, 1911. *Reply to Mr. Joseph* (pp. 1-14): G. F. STOUT. - From a brief reply to Mr. Joseph, Professor Stout advances to a sketch in broad outline of his own general philosophical assumptions. They include his view of the nature of knowledge, the psychology of cognitive processes, and the psychological problems connected with the perception of external objects as independent reals. *The Philosophy of Bergson* (pp. 15-40): J. SOLOMON. - A general survey of Bergson's philosophy, giving an exposition of the contents of Bergson's three chief works, viz., "Time and Free Will," "Matter and Memory," and "Creative Evolution." The exposition is sympathetic, though in the main non-critical. *A New "Law of Thought" and its Implications* (pp. 41-53): E. E. CONSTANCE JONES. - "My contention is that my Law of Identity in Diversity first makes (theoretically) possible a satisfactory statement, in *S is P*, *S is not P* form, of the Laws of Contradiction and Excluded Middle. . . ." *Motive* (pp. 54-66): J. L. STOCKS. - An examination of different views of motive, its connection with reflection, will, intuition, and feeling, with a view to determining its nature. It is concluded that "motive is best defined by reference to end." *Discussions* (pp. 67-76): On the Distinction between Waking and Dreaming: J. A. J. DREWITT. *Reply to Mr. Russell's Explanations*: F. H. BRADLEY. *Critical Notes*: John McTaggart, Ellis McTaggart, *A Commentary on Hegel's Logic*: BERNARD BOSANQUET. Hastings Berkeley, *Mysticism in Modern Mathematics*: PHILIP E. B. JOURDAIN. Hugh S. R. Elliot, *The Letters of John Stuart Mill*: CAMETH READ. A. E. Crawley, *The Idea of a Soul*: W. MCDUGALL. E. B. Titchener, *Lectures on the Experimental Psychology of the Thought-process*: HENRY J. WATT. Dimitri Michaltschew, *Philosophische Studien: Beiträge zur Kritik des Modernen Psychologismus*: G. E. MORE. Ralph Barton Perry, *The Moral Economy*: JAMES SETH. Hermann Cohen, *Kants Begründung der Ethik nebst ihrer Anwendungen auf Recht, Religion, und Geschichte*: A. D. LINDSAY. James Lindsay, *Studies in European Philosophy*: H. RASHDALL. *New Books. Philosophical Periodicals: Notes.*

RIVISTA DI FILOSOFIA. November-December, 1910. *L'Individuo* (pp. 541-557): ROBERTO ARDIGÒ. - A study of individualism based upon the dictum of Heraclitus, "one from all and all from one." The result is in ontology materialistic atomism *versus* idealistic solipsism, and in cosmology panpsychism *versus* Spencerian homogeneity. *Conosci te stesso* (pp. 558-577): B. VARISCO. - An historical review of the Socratic "know thyself" from Plato to Fichte; the actualist view of the ego is taken as against the substantialist, the real self being considered an empirical product and consciousness not a form but an organization of experiences. *Il valore teoretico della logica* (pp. 578-598): ANNIBALE PASTORE. - The value of logic is threefold: as empirical, it furnishes a practical exercise of reason; as scientific, it provides a formal guide to all sciences and widens the bounds of their achievements; as philosophical, it

discloses the logic of the universe, not in the Hegelian ontological sense, but in the cosmological meaning of the essential rationality of the universe. *Scienza e Filosofia* (pp. 599-608): ALDO MIELI. - Philosophy is not an independent discipline, but should be confined to the summarizing of the results of positive science, problems of cosmology and of consciousness being unwarranted extensions beyond the bounds of logic or certainty. *I metodi critici di G. Gentile* (pp. 609-611): GIOVANNI MARCHESINI. - A defense of R. Ardigò against the "nauseating" critical methods of G. Gentile. *Bibliografia Filosofica Italiana* (1908-1909) (pp. 612-628): ALESSANDRO LEVI. *Recensioni e Cenni. Notizie*, including a eulogy and a defense of William James against the strictures of the most youthful Italian philosophers, who at first acclaimed him with enthusiasm. *Atti della Società filosofica Italiana*, with an account of the project for reprinting Italian philosophers.

REVUE DE METAPHYSIQUE ET DE MORALE. January, 1911. *Fragments de philosophie morale* (pp. 1-29): F. RAUH. - Some extracts from a book the author is preparing. His conclusion springs from a theory of "the plasticity of collective reality." *Sur le principe d'induction mathématique* (pp. 30-33): VACCA. - The discoverer of this principle is Francesco Maurolico, an Italian mathematician of the sixteenth century. There are other mathematical axioms equivalent to it. *Notes sur la croissance et la différenciation* (pp. 34-63): L. WEBER. - A study of the results and methods of investigation in the new bio-mechanics. *Vues sur les problèmes de la philosophie* (pp. 64-99): G. SOREL. - A study of new movements in contemporary philosophy, and the contributions of certain contemporary philosophers to them. *Études critiques: L'histoire du problème de la connaissance de M. E. Cassirer*: MEYERSON. *Questions pratiques. Réflexions sur la notion et sur quelques fonctions de l'état*: H. BOURGIN. *Supplément*.

Britan, Halbert Hains. *The Philosophy of Music: A Comparative Investigation into the Principles of Musical Esthetics*. New York: Longmans, Green, and Co. 1911. Pp. xiv + 252. \$1.35.

James, William. *Some Problems of Philosophy: A Beginning of an Introduction to Philosophy*. New York: Longmans, Green, and Co. 1911. Pp. xii + 236. \$1.25.

Read, Melbourne Stuart. *An Introductory Psychology*. New York: Ginn and Company. 1911. Pp. viii + 305.

Swett, John. *Public Education in California: Its Origin and Development, with Personal Reminiscences of Half a Century*. New York: American Book Company. 1911. Pp. 324. \$1.00.

Whittaker, E. T. *A History of the Theories of Ether and Electricity from the Age of Descartes to the Close of the Nineteenth Century*. London: Longmans, Green, and Co.; Dublin: Hodges, Figgis, and Co., Ltd. 1910. Pp. xiv + 475. 12s. 6d.

Winch, W. H. *When Should a Child Begin School? An Inquiry into the Relation between the Age of Entry and School Progress. (Educational Psychology Monographs.)* Baltimore: Warwick & York, Inc. 1911. Pp. 98.

NOTES AND NEWS

At the meeting of the Aristotelian Society on May 1, Dr. F. C. S. Schiller read a paper on "Error." In attempting to distinguish in thought between truth and error, no help is obtainable from the existing logics. For these either (1) take up an *ideal* or (2) a *formal* standpoint, or (3) pass confusedly from one to the other; and from none of these standpoints is the problem of error visible. Error is either included in (formal) truth, or supposed to have been transcended. To discriminate between truth and error a new logic is required, which does not begin by depersonalizing judgment and abstracting from meaning. Such a logic will note that an "error" is always relative to the context and circumstances of an assertion, and that these are always personal and partial. Error, like truth, rests on a selection of the relevant, because without relevance there is no meaning. But the difference between a true and a false assertion is that the one furthers, and the other thwarts, a human purpose in cognitive activity. It is, in short, a difference in value. But neither valuation is absolute; absolute solutions of cognitive problems are both impracticable and scientifically unmeaning, which is why science is infinitely progressive. It follows that what in knowing we are concerned with is a number of cognitive states intermediate between absolute truth and error, such as lies, errors, methodological fiction, methodological assumptions, postulates, validated truths, axioms, and jokes. These should all be discriminated, and it is particularly worthy of note that, as both in the case of the "lie" and the "joke," the ostensible is not the real meaning of the assertion, and the latter requires a recognition of the maker's intention, any logic which depersonalizes its subject incapacitates itself from distinguishing between falsity and lying and jest and earnest. Hence intellectualism as such is incapable of understanding a joke. Humanism, on the other hand, by making these distinctions, explains why it has always refused to "convert simply" the doctrine, "All truths work." Yet this conversion continues to be falsely attributed to it.—*The Athenæum*.

PROFESSOR G. TSCHELPANOW, of the University of Moscow, has been commissioned by the Russian Government to study the various psychological laboratories in order to complete plans for the erection and equipment of a psychological laboratory in Moscow, the money for which has been contributed by a well-known local benefactor of science and art, \$50,000 for the building and \$10,000 for its equipment. At the Eighth Annual Meeting of Experimental Psychologists held this spring at Cornell University, Professor Tschelpanow gave some account of the status of psychology in Russia. Although an interest has been taken in it for twenty years or more, its progress has been hampered by the uncertainty of political conditions and by the affiliation of psychology with philology, instead of with the natural sciences, as well as by the fact that Russian universities, having only collegiate rank, do not provide opportunities for research. Laboratories already exist at Odessa, at Kiew, and at Moscow.

Of these the one at Odessa is the oldest and is known through the work of N. Lange. Moscow is, however, the most favorable location for a modern laboratory, as the present one there was started four years ago with more liberal provisions. It has now thirty students in experimental psychology. Russian professors depend to a very large extent upon translations of American text-books, especially those of Sanford and Titchener.

LONGMANS, GREEN, AND Co. have issued "Some Problems of Philosophy, a Beginning of an Introduction to Philosophy," by William James. The first paragraph of the prefatory note by Henry James, Jr., is as follows: "For several years before his death Professor William James cherished the purpose of stating his views on certain problems of metaphysics in a book addressed particularly to readers of philosophy. He began the actual writing of this 'introductory text-book for students in metaphysics,' as he once called it, in March, 1909, and to complete it was at last his dearest ambition. But illness, and other demands on his diminished strength, continued to interfere, and what is now published is all that he had succeeded in writing when he died in August, 1910." Also the dedication: ". . . he (Charles Renouvier) was one of the greatest of philosophic characters, and but for the decisive impression made on me in the seventies by his masterly advocacy of pluralism, I might never have got free from the monistic superstition under which I had grown up. The present volume, in short, might never have been written. This is why, feeling endlessly thankful as I do, I dedicate this text-book to the great Renouvier's memory."

THE Yale University Press announces a volume of essays by the late Professor Sumner. These essays must take the place of the work on "The Science of Society" to which Professor Sumner had been devoting himself for a number of years and to which his volume "Folkways" was intended to be an introduction. The latter work has just been reprinted by Ginn and Co. with important variations of text, with an introductory note by Professor Albert G. Keeler, and with a portrait of Professor Sumner.

PROFESSOR PAUL H. HANUS, head of the department of education at Harvard University, has been chosen to take general charge of the investigation of the New York public school administration conducted by the School Inquiry Committee.

JOSIAH ROYCE, professor of the history of philosophy at Harvard, will be the university delegate at the celebration of the five hundredth anniversary of the University of St. Andrews.

DR. WILLIAM McDOUGALL's new book, "Body and Mind," will be published by Luce & Co. before the close of this season.

DR. SAVILLA A. ELKUS, of Columbia University, has been appointed assistant in philosophy at Vassar College.

HENRY HOLT AND Co. are issuing "The Stability of Truth," by President David Starr Jordan.

MISS LILIEN J. MARTIN has been appointed professor of psychology at Stanford University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE FACULTY DOCTRINE, CORRELATION, AND EDUCATIONAL THEORY.¹ I

I. INTRODUCTION

AT a meeting of teachers in London recently, a prominent educationist expressed some dismay at the growing influence of psychology in education. For he said that he understood that psychologists, nowadays, had deprived us of our faculties. Personally, he felt that he could not do without his, and he thought that teachers would find it very hard to discuss and apply educational theory if they were no longer able to use such terms as memory, imagination, reasoning, *et id omne genus*, without being open to the charge that they were speaking of non-existent entities.

Let us at the very outset admit that "faculties" are explanations and are not necessarily causes. A fact is explained when we are able to join it up with similar facts in a common judgment. Such an explanation is not ultimate—probably no scientific explanations are—but it may have a pragmatic value; it may help us to handle the multitudinous happenings of our real world more economically; it may help us to draw conclusions of service for practise. We *must* conceptualize if we are to draw conclusions which in any way pass beyond the bare facts revealed by observation and experiment. Unrationalized perception leads nowhere. But, on the contrary, conceptions, to be valuable, must be full of the possibilities of perceptual content; they must start from facts and point the way to new ones.

We must, I think, further admit that the conceptualizing of early psychology was a process too easily carried out; and, in the first break-up of its merely classificatory doctrines, it was inevitable that the easy solutions of the past should be discountenanced and vigorously denied. It was inevitable that the increasing knowledge of the

¹ This paper was given in outline before the joint meeting of the Aristotelian Society, the Mind Association, and the British Psychological Society in London, 1910.

extreme complexity of mind should lead to a disbelief in the few simple unities which heretofore had largely done duty for accurate psychologic thinking. The reaction was largely for good, and we owe to it the development of latter-day scientific psychology.

Analysis is the keynote of modern work; but one can not draw useful conclusions from merely analyzed contents, we needs must put things together before we can use a science. It is therefore again an inevitable necessity, and no mere accident of personality, which induces the professors of experimental pedagogy to bind up, or try to bind up, the *disjecta membra* of experimental psychology into useful bundles. In carrying the bundles about they will assuredly lose a stick here and there, and some of the sticks will get into the wrong bundles; but the things simply can't be carried at all unless they are bound up somehow, and if they are left grounded where they lie they will be of no human service. It was, therefore, quite to be expected that Professor Meumann, the head and front of the offending, should be severely criticized by Professor Wundt for what he regards as the reintroduction of the faculty doctrine in psychology.

I hold no brief for the defense of the faculty doctrine, and I am against most of the educational inferences which have been drawn from it. But to overstate the case against it will produce a violent reaction when it is discovered that carefully conducted experiment may lead to a justification of some form of it—a form and a justification which will not sanction the errors of medieval pedagogy, but will give us hope that our mental training is not quite such an atomistic affair as the extremists of the opposite school assert. It is perhaps a little unwise, and I am not sure that it is not a little too early, to attempt a mediated view—we are not yet ripe for the synthesis of these contradictions. In attempting such a task, one has merely the doubtful consolation of knowing that one is likely to be criticized by both parties, and alas! one has no partisans.

II. THE FACULTY DOCTRINE AND EDUCATION

Probably no problem in educational psychology calls to-day more urgently for continuous and exact treatment than the relation between the various mental powers of school children.

I have used the word "powers" because I wished to avoid declaring, or rather, insinuating, any opinion at present as to what is known in psychology as the "faculty doctrine." Much more patient experimental work remains to be done before we shall be entitled to pronounce any confident opinion on all the problems—for they form a group rather than a single problem—which are raised in the attack and defense of this doctrine of the faculties.

This is not the place for any extended discussion of the various

psychological forms of the doctrine; indeed, some of the leading theorists of to-day are apt to regard the discussion as closed. But we can at once dismiss one aspect of the faculty theory, namely, that which explained our memories and our imaginings by postulating as causes a kind of separate mental organ or agency called *the* memory, and another called *the* imagination. Our philosophy of explanation has grown less naïve than it was when such postulations satisfied us.

But there is another aspect of the faculty doctrine which can not be dismissed in such a cursory way. According to that, a man with a good memory is a man who can remember, though, doubtless, with variations due to his greater or lesser interests in particular subjects, pretty much and pretty well anything he wants to; he can learn poetry, he can learn mathematical formulæ, he can learn dates in history, he can learn geography—he can remember both text and maps, and he can learn tunes (some of the defenders of the doctrine would feel a little hesitation on this count), and he can remember them all. If he is an imaginative person he can produce from among the things he knows new things which are psychologically original, that is, original from the standpoint of psychology, the individual standpoint. He may have learned stories, but he can write others which are in no sense mere repetitions of what he has learned; he may have learned to draw and remember the appearances of objects, but, as an imaginative draughtsman, he passes beyond what he has seen and learned. Indeed the ultra supporters of the faculty doctrine would maintain that he would invent better if he had not learned or could not learn to draw and remember actual objects. In mathematics such an one will tend to invent his own formulæ, in science he will frame his own hypotheses, and in music will make tunes for himself: all of which, *bien entendu*, need not be original except in the psychologic sense. Now it is fairly obvious here that we are dealing not with a single problem, but with a whole group of problems, and perhaps that consideration may appear more clearly and usefully to the student of educational psychology if I approach the questions from the educational side.

III. EDUCATIONAL THEORY AND MENTAL DISUNITY

Educational anti-facultists of to-day express themselves in ways which assert or imply some or all of the following propositions:

1. That there is little positive correlation or connection between the various memories and imaginations and reasonings which, as a sort of general aggregate rather than as generalized functions, constitute *the* memory, or *the* imagination, or *the* reason.

2. That there is a negative correlation between these faculties.

Thus, persons who are endowed with good memories will tend to be weak imaginatively and *vice versa*; and the cultivation or exercise of one of these powers will affect the cultivation of the other adversely. I use the double expression, cultivation or exercise, because I do not for the moment wish to prejudge the question as to whether *the* memory or *the* imagination can be trained, in the scholastic sense, at all. Professor James, we may remember, denied altogether that one could train the mere brute retentiveness which underlies all forms of memory.

3. That, while admitting that particular memories and particular imaginations can be trained, it would be held that there is no transfer of the results of training from one memory to another or from one imagination to another. They are quite specialized functionally and, further, they are specialized by content.

As this is a JOURNAL OF PSYCHOLOGY, the genesis of these views may be worth a moment's consideration.

First of all, they are due to the backward pragmatic test of truth. There is general dissatisfaction with the educational results of to-day which is felt by all or almost all educationists. It is held, therefore, that the views on which these results are based can not be true, for our educational practises have proved unsuccessful. Hence, therefore, the contrary doctrines are supposed to be the true ones.

Secondly, there is an increasing recognition on the part of educationists that psychology has something vital to say about the mental basis of education. They know that the leading English-speaking theorists of to-day have, with little exception, decided against the faculty doctrine; and they take that decision to mean (as it does not necessarily) that the above propositions are direct consequences of its overthrow. And, apart from this, the growth of experimental methods has tended to make the merely educational mind, and, shall we say, some psychological minds, conclude straightway that not only is the old causal unity—the synthetic unity of apperception—dissolved into uncorrelated and separate faculties, but that even these faculties are also broken up into quite unrelated parts.

Memory itself, which had a long run as a separate homogeneous function, is dissolved into visual memories, auditory memories, articulatory memories, memories of motor sensations, and so on.

And from the fact that a person *may* be good at one and relatively weak in another mnemonic form, it has been concluded that there is nothing left at all homogeneous enough to be called *the* memory. There is less difficulty with *the* imagination; we have always spoken of an imaginative person, but we have not usually been so clear as we have been in the case of memory that an imagina-

tive person was good all round at all sorts of imaginings. The "image" doctrine of imagination currently accepted would tend to further accentuate belief in the separate nature of the functional operations commonly held together in a loose concept with the help of the word imagination. For how, it would be argued, should a training of visual images help us to form auditory ones?—and so on.

Issuing from all this logically, though genetically, I believe, only appealing to it for support, is the enormous trend in favor of practical education, the decline of the classics, and some others of those movements one knows as modernism in education. For, if these propositions be true, we can educate a child in particular functions only: if we want him to grow up with powers of imagination we must make most, if not all, of our school exercises of an imaginative kind: memorizing will be obstructive or at best nugatory, and reasoning will not help us. Or if we want him to learn from the work of others to become adapted to his environment, to frame his inner relations in accordance with outer ones, we must set him to observe and remember; imagination with such ideals being reduced in name and fact to phantasm or fancy. Indeed, the educationist often goes further, as logically he ought to do, on these premises. Not only is the cultivation of the separate faculties, *e. g.*, memory and imagination, believed to take place without interpretation and even with adverse influences one on the other, but the separate memories and the separate imaginations must, if we require to improve them, be cultivated in the form in which they are hereafter to be exercised; for there is little or no transfer of improvement gained in one particular function to any other whatever, even to those which, according to the older faculty psychology, were regarded as practically identical with it, and were called by the same name. How *can*, one would say, the memory for dates help the memory for chemical formulæ, the memory for pictures help the memory for tunes, or how should practise in imagining interesting stories help a child to imagine new designs in draughtsmanship? I admit the extreme difficulty in answering these questions satisfactorily, even if experiment should show that one function does help the other.

The general line of argument is further supported by well-known facts drawn from adult psychology. Jones is a highly imaginative person; his reasoning we believe weak—his conclusions do not agree with our own; and he does not know the facts we appeal to; we shrewdly suspect his memory to be faulty. Brown, on the other hand, reasons beautifully; but he never remembers facts and has no imagination. Robinson is full of facts, but he is a stodgy person who can not reason on them nor throw them into combinations different from those in which they were originally experienced by him.

And we do not wonder at these things; for Jones is an artist, Brown was educated in logic and metaphysics, and Robinson is the unfortunate product of an encyclopedic curriculum punctuated plentifully with examinations.

These are people who, if they were arranged in the order of their proficiency in mental powers, would be placed very differently according as we choose memory, imagination, or reasoning as the basis of our differentiation. Robinson, for example, would stand 1st for memory and *n*th for reasoning or imagination, at least so common sense supposes.

Nor is it merely a common sense opinion unsupported by philosophers and psychologists. We may remember Sir William Hamilton's essay on the study of mathematics as an exercise of the mind, and Herbert Spencer's appraisal of mathematicians balanced by his estimation of the defective reasonings of men of science. They are supposed to be exclusively devoted to particular types of reasoning and hence to be unable to reason in any other way. Their faculty of reasoning is not only no faculty at all, but is divided against itself in such a way that the cultivation of part of it militates against the operation of the other part. I append the following quotation to show that I have not strained the argument involved in Spencer's essay.

This instancing of five men, occupied with mathematics and mathematical physics, in whose minds the formula of Evolution raised no answering conception, may be thought to imply an undervaluation, if not even a reprobation, of mathematics and physics as subjects of study. No inference could be more erroneous. To guard against it, however, let me point out that while exclusive devotion to the exact sciences produces certain defects of thought, exclusive devotion to the inexact sciences produces defects of thought of an opposite kind. These last present phenomena under such complex forms, with interdependencies so involved, that necessities of relation can not in most cases be said to exist; and the many causes simultaneously in operation so obscure the action of any one, as in large measure to exclude the idea of definite causation. Among plants a few fundamental relations may be fairly alleged, as between the monocotyledonous germination and the endogenous mode of growth, or between the dicotyledonous germination and the exogenous mode of growth. But relations among multitudinous combined traits, such as kind of fructification and possession of thorns, or hard-shelled nuts and shapes of leaves, can not be shown to have any causal characters. So with animals. Though it is a trait of creatures having *mammæ* to have seven cervical vertebræ, yet for this correlation of structures no necessity can be alleged; as is proved by the fact that though at one time the connection was supposed to be universal, there have of late years been discovered mammals having eight vertebræ in the neck. Hence, those who exclusively study animals and plants, being perpetually impressed by connections of facts which are either fortuitous or for which no reason can be assigned, are not daily habituated to the perception of causal relations, and such generalizations as they can establish come to be regarded as empirical. A purely inductive habit is encouraged and a deductive habit discouraged. The resulting mental tendencies operate

in other regions of thought, so that everywhere necessity of relation is doubted, and the idea of inevitable consequence meets with no acceptance. Many times in a distinguished biologist I have observed the effect thus described. Present him with a great accumulation of evidence supporting a certain conclusion, and this conclusion, coming before him under the form of an induction, he would entertain and seem ready to accept. After a time point out that this conclusion might be reached deductively from known necessary truths, and immediately his scepticism was aroused. Forgetting the inductive basis originally assigned, the deductive proof excited such repugnance as tended to make him reject what he before admitted. The habit of mind encouraged by dealing exclusively with empirical generalizations produced an abnormal distrust of all others.

As I intend, finally, to deny the validity of educational arguments drawn from such evidence, I ought to say at once that such a method is inevitable at a certain stage in educational theory, and that it is the first and obvious way of attack may be shown by listening to any conversation among scientific men when they are "off" their own particular line. Bearing in mind the evils as well as the good which we believe to be derived from each study in its highly specialized form, we have forthwith agreed that a modicum of the same studies will, in youths and children, produce similar effects, though proportionately smaller, of course. Hence we ought to teach that, and should not teach this, and so on. A first-rate mathematician is said to be weak in adding up sums; hence accuracy is not necessary for school children, they can become great mathematicians without it. A great literary man had a poor memory, and was not always sure of his spelling; so that good spelling need not be insisted on in school, even for subsequent success in literature. A great scientist used few books, he owed his knowledge to first-hand perception without guidance from others. Now perception is a separate faculty, called by pedagogues the faculty of observation; hence we must, in order to produce scientists, confine the youthful mind to nature study of a direct kind. These arguments are everywhere current among educationists either explicitly or implicitly. Shall we cease to argue thus? By no means; we must and ought to argue from the cases we know. But we ought to know more cases. We must admit that such persons exist; but before drawing conclusions from their psychology to ordinary educational practise, we must ask, Are they normal adults?

Can we best find psychological direction in the study of abnormal cases, whether they be found amongst men of genius or in lunatic asylums? It is known to be extremely dangerous to make general inferences from the extreme ends of any psychological scale; some of our best attested correlations give way at the edges. Even in so simple a matter as the relation between temperature and volume of water, we should be deceived if we trusted to a kind of rule-of-three

conclusion. For we find by experience that there is a peculiar break at 4° Centigrade: after continuously shrinking with falling temperature, the liquid at this point begins to expand. The relationships between our various mental powers are, doubtless, at least as complex as that between the temperature and volume of water. Indeed, we need not argue by analogy that they are so. It is well known among those who work much in the correlation of mental functions that, towards the limits of the series, the correlations may be even reversed, and mathematicians caution us against attaching too much importance to the cases on the edges of series; it is, in fact, a complaint against the world-known Pearson formula of correlation that it allows too much weight to the extremities of the series correlated.

It is obvious that, until we have established correlations and connections all along the scale, which are *generally* true, we can draw no valuable conclusions for practise of any kind. This work is, fortunately, in process of being done. Our every-day outlook is always towards limiting cases, because these are striking and noticeable. That they were also misleading we scarcely began to suspect before experimental psychology began its investigations on adult professors and students who were accessible to laboratories.

But may we then draw inferences which shall be valuable in ordinary pedagogy? No, not even then; for children are not adults; they are not even miniature editions of adults. They differ in ways which are vital for educational theory and practise. If the above line of argument is sound, it conducts us directly to observations on normal children as the only way of obtaining real guidance for pedagogy.

IV. EDUCATIONAL THEORY AND MENTAL UNITY

But pedagogy, like more established sciences, and especially like those which oscillate between a normative and normal condition, is by no means a solid body of consistent doctrine.

The views of the school to which I have hitherto referred all tended in the direction of reducing our belief in the unity of mind: its members disbelieve in the faculty doctrine because they do not believe that the processes referred to generically as those of one faculty are, as a matter of fact, in direct positive correlation and connection with each other; they accept the faculty doctrine in so far as they maintain that the improvement due to the exercise of one faculty is not transferred to work undertaken by another. In so far as the faculty doctrine is a doctrine of separation, they subscribe to it; in so far as it is a doctrine of unity and combination, they deny it. But the doctrine is attacked, not only because it is considered to

regard the mind as too much of a unity, it is attacked by another school because it ascribes too little unity to the mind. This school holds that the various mental powers are of course highly correlated, so highly that it is absurd to talk of disparate powers or faculties at all; the work of finding correlations between mental powers seems to them a *πάρεργον*. I merely mention *en passant* those who believe that mental life can be quite adequately pictured as the synthesizing activity of a unitary soul or subject, since this view is not active to-day as a basis of psychological investigation, however stoutly it may hold its own in the metaphysical field. There is probably a truth underlying the view which few psychologists of sensation have yet allowed for, namely, the necessary and inevitable participation of the subject or reagent or agent, as I should prefer to call it, in every fact of knowledge.

But this participation can be shown only by doing, and by doing definite and conceivable things. These activities are many and multi-form, it is said, and rightly so. But it is further implied that they may all be summed up in a few fundamental categories, to wit, discrimination, comparison, association. These, *bien entendu*, are not new faculties, they are elementary processes or principles of processes which can be, and are, employed in the operation of the various so-called faculties, perception, memory, imagination, reasoning, etc., and, moreover, can be, and are, employed in various fields of knowledge. If well employed in an imaginative field, they will result in fertile imagination; in a mnemonic field, they will result in accurate and permanent memory. Consequently, if we set the same individual various tasks involving processes of memory or imagination, he will, as compared with other people (my reader will remember the fertile methods of correlation by rank) tend to do about equally well in these different tasks. Why? Not because his memory and imagination are the same thing exactly, but merely because he applies, or may apply, his discriminative, comparative, and associative powers equally in all these cases.

So that the labors of experimental inquiry are undertaken in vain, the correlation found *must* be high. If one points to the well-known cases, above cited, of Jones, Brown, and Robinson, one is fairly answered that the doctrine does not require that each person shall, as a fact, be equally strong in memory, imagination, etc., but only on condition that he had applied his powers of discrimination, comparison, etc., equally; that is, had given equal attention to mnemonic and imaginative subjects. Logically, one sees that imperfections would tend to be thrown on *the* attention, and a perusal of experimental work tends to show that this has, in some cases, actually occurred.

Opponents urge that the power to attend to any one set of mental processes, at least continuously, must depend upon large native endowment for that particular function. The education of the attention is ruled out as the only factor of difference, since the power to attend to different processes differs initially, that is, before a process of training has come in. It is a difficult position, since we have no exact methods of separating the attention factor in the result from the factor due to the natural endowment for the work in question. For example, one boy does arithmetic well with little attention; another may attend carefully, and fail. "Yes, we know that," we may answer, "but we can get over that difficulty by comparing the work of the same boy only with his own work of the same kind and difficulty done at different times. The difference will give an indication of the waxing and waning of attention." "No," it is answered, "the power to perform the process varies, quite apart from the attention given to it; it waxes and wanes from various causes other than the failure of attention, from lack of nutrition, from practise, from fatigue, and so on." Extremists go further, and imply that attention to any process is simply an indication of the ripeness and fulness, so to speak, of the organs or other parts, neurological or otherwise, which are physiologically involved. There is much to be said for this view, were we considering *spontaneous* attention merely; but common experience uses the term attention to denote those cases in which, notwithstanding our known weakness, our felt fatigue, we force ourselves to attend, as the phrase goes; and we believe that we can thereby raise the results of work which is issuing from a rather used-up power. Of course, it is not pretended that attention can increase the work from an organ quite fatigued; indeed, it seems to me that, theoretically, we might define fatigue as indicated by a falling-off in the power to perform some process which additional activity of attention could not prevent. Practically, with the exception of those who believe they are measuring differences in the power of attention by means of experiments which actually measure work done, what actually happens among good experimenters is something like this: Every precaution is taken to secure all the possible attention of which each subject is capable on every occasion on which the tests are made. We say frankly when we are dissatisfied with the attentiveness of an observer—we often are when his results are jerky—so we speak out so as not to mislead our readers and, incidentally perhaps, to preserve the conclusiveness of our own results. So that the theoretical test I propose is one already implicit in good practise. I have ventured apparently off the track, but the discussion is necessary to justify procedure in which tests are made of mental functions, for otherwise it might be alleged that one is measuring merely

different states of attentiveness of the same subject, and nothing else.

Much of the above argument seems abstract and metaphysical, and some would think it absurd to suppose that practical or even theoretical pedagogy has been much influenced by considerations of the unity of mind. To instance Herbart would only be to mention a case in which the same man's pedagogy and metaphysics were far asunder. For whilst he postulated a unitary soul or subject, he gave most admirable instructions pedagogically as to the way in which to produce a unified mind which, *ex hypothesi*, he started from as an original possession. But there is a school of educationists who do believe in unity; they assert that the results of the faculty doctrine are pernicious, and that, *a fortiori*, the views of those who think that the faculty doctrine itself implies too much coherence in mental life are more pernicious.

The training of the faculties—a *façon de parler* beloved of pedagogy—is for them a myth. The whole mind hangs together. (Some of us wish it would hang together for the space of one article; our own minds, do I mean? Yes, and those of our readers?) Practise in any mental function means for them improvement all round, if it means improvement at all. Consequently, all pedagogical exhortation which recommended this or that particular study as specially suitable for improving some particular mental power, *e. g.*, that to train a boy's reasoning powers (the faculty doctrine calls it *the reason*) we must teach him arithmetic, or demonstrative geometry, or grammar, is thereby at once placed out of court.

If the whole mind is the unity which these thinkers profess it to be, mental pabulum is useful for its general effect rather than for its special value in training special powers. The apostles of the training theory are easily ridiculed when, in answer to the charge, for example, that the public school boy never really learns to know Latin or Greek, they point out the magnificent effects which these studies have as mental discipline. *Les extrêmes se touchent*. The believers in the complete unity or in the extreme disunity of mental functions meet on common ground. The matter of education becomes everything, the method nothing. If we can not develop mental powers and transfer the effect from one subject of instruction to another, we must aim obviously, as far as we can, at giving instruction in the very knowledge, and practise in the very activities, which the adult will probably want to know and do; we shall not teach him Latin verse to improve his taste for the English poets; we shall not teach him Euclid (pardon; demonstrative geometry, I mean) to help him to reason about the affairs of his business life; he must, in very truth, begin his life work young, and it is futile to suppose that, by any artificial arrangement of

knowledge specially prepared for school purposes, we can give a pupil a special dose of memory training, reasoning power, or fertility of imagination. All the training really possible or necessary will come incidentally in the acquisition of knowledge which is valuable for its informatory and not for its disciplinary effect. Pedagogical method *may* still be valuable, but it will be a method of presentation merely, not a method which puts practise and training before the acquisition of fact.

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RHYTHM AND THE SPECIOUS PRESENT¹

A SATISFACTORY working hypothesis for the study of rhythm-perception has not yet been formulated, although several writers have come very close to the statement of the theory which seems to me adequate. That there is need of a new hypothesis is evident to any one who takes the trouble to go over the experimental literature dating from Bolton's paper.² The impression which one gets from this literature is that the psychologists are well aware that rhythm-perception presents a big problem, but are at sea as to the steps to be taken towards the solution thereof. An interesting light is thrown on this situation by the case of a German writer who is much quoted on the subject of rhythm-perception, and whose article of over a hundred pages was presumably preliminary to an account of extensive experiments of his own. The "Fortsetzung folgt" which concludes his second instalment remains an unkept promise, and there are certain things which indicate that he was unable to handle the experimental problems, that the undertaking was too much for him.

Introspective work has convinced me that the perception of a rhythmic grouping or series is conditioned by a periodic change in the specious present. When a series of stimulations (auditory, for example) runs off without any decided rhythm or grouping, the specious present maintains an approximately fixed length, or, at least, the variations in its length have no functional relation to the series of stimulations in question. Sensations appear serially, remain for a greater or less time in "present" consciousness, and fade out one by one. When the sensations begin to group rhyth-

¹ Presented, in part, at the Chattanooga meeting of the Southern Society for Philosophy and Psychology, December 28, 1910.

² "Rhythm," *American Journal of Psychology*, 1894, Vol. VI., pp. 145-238.

mically, either through the introduction of objective differences in intensity, duration, intervening period, or complexity, or through the factors which we for convenience designate as "subjective," the relation of the series to the specious present at once becomes definite.

If the sensations group by fours, forming what is called in the preferable terminology a "four-rhythm," the first member of each group, as it is roused, stands alone—alone, at least, in so far as the other members of the series are concerned. If the preceding sensations, belonging in other groups, are present at all, they are memory images: but it is highly probable that they are not present to consciousness even in that form. When the second sensation is aroused, the first is still present, not as a memory image, but as a sensation; present, that is, in the same way in which it was present when it first entered. The first, second, and third sensations are retained in the specious present until the fourth has arrived, and the four constituting the group are therefore actually sensed together. Immediately thereafter, the slate is cleared, as it were, for the next group. The specious present shrinks to such an extent that the sensations which a moment before were included in it are forced out.

There are numerous mechanical processes which might be used to illustrate this periodic elongation and contraction of the specious present. The action of a rosined violin bow on the string is such a process. However steadily the bow is drawn, the string is periodically drawn aside to the limit determined by the tension of the string and the friction, from which point it snaps back to begin the movement anew.

This specious present may be considered as being fixed at the "front" end, and as being stretched steadily backwards with the passing of time, until at the extreme point of stretch it contains that part of the time stream to which a group of the sensations corresponds; then it is released and snaps up to its original position, before the first member of the next group enters it.

The periodic change in the specious present is not essentially connected with variations in the degree of attention. Attention may be best at the beginning of the group, or at the end, or at some intermediate position, without affecting the essential features of the grouping.³ The whole process may receive a high degree of attention, or a very low degree. But the specious present changes occur, or there is no rhythm. The attention-wave theory of rhythm-perception has no greater agreement with the facts than is to be found

³ The experiments of Arps and Klemm, *Psychologische Studien*, 1908, Vol. IV., pp. 505-529, in theory bear on this point, but are too crude to furnish any data.

in its ascribing the grouping to some sort of periodicity in consciousness itself, rather than in the content!

The attention-wave theory is usually modified by a supplementary explanation in terms of synthetic activity of the mind.⁴ For introspection, this is completely out of the question. The rhythm group is an immediate sensory fact, and depends on no higher synthesizing activity than does the fusion of two tonal elements.

We have no very reliable determinations of the series conditions which influence or determine the rhythmic groupings. Bolton thought that the most satisfactory duration for groups of twos, threes, fours, sixes, and eights was slightly over one second. An examination of his tables shows us that he has no evidence for this claim. He had no systematic procedure which would enable him to find what rates a subject would really prefer for a given group form, and, moreover, his results are obtained by averaging together a few determinations on several different subjects; a procedure which produces the most unreliable results. For example, the average rate of the three-groups for seven subjects was found to be 460 sigma, although only one of the subjects actually heard three-groups at the rates near that value.

For the influence of intensity-accents we have various agreements and disagreements of experimental results. It is certain that under proper conditions the accents may be heard at any position in the group; the group formed, that is, with the accented member occupying any position. What the "proper conditions" are, is a question; undoubtedly, the point at which the subject begins to hear the series is one of the influential factors, but the fact that subjective accents may be placed on practically any member of a group complicates the situation.

Several attempts have been made to show that there is a motor basis for rhythmic perception, but they can not be said to have had very important results. There is no doubt that periodic movement assists the formation of rhythmic groups in the content, but this fact has little bearing on the motor theories. The facts seem to be that all sorts of sensations lend themselves to serial grouping, and that if two series are practically coincident, they are grouped as one series. Hence, a series of auditory, visual, or tactual sensations which does not group easily alone, will group if combined with a strongly accented muscular series.

Stetson⁵ has built up an ingenious but purely artificial motor theory of rhythm, based on the so-called "ballistic" movement:

⁴ See Bolton, *op. cit.*, p. 220.

⁵ *Psychological Review*, 1905, Vol. XII., pp. 250-270, 293-350.

a movement due to the alternate contractions of antagonistic muscular systems, the contraction of the first system serving as the stimulus for the contraction of the second, which checks the movement and returns the member to the original position. No other type of muscular action, according to Stetson, can serve as a basis for rhythm. As a matter of fact, rhythms beaten by lifting the hand or foot, letting the member fall each time by gravity, are just as "good" subjectively as rhythms beaten by "ballistic" movements.

The motor theories of rhythm-perception rest on no other bases than the facts that motor expression of certain sorts is good rhythmic material, and that periodic stimulation usually produces muscular activity. No one has been able to show that the motor factor is indispensable, and the introspective evidence is clearly on the other side. With the utmost possible relaxation of the entire body, good rhythmic grouping of an auditory series can be obtained. The grouping is easier and more definite with objective accent, but can be obtained when there is no objective accent, and no discoverable motor rhythm. The subject must, of course, lie flat on his back in this experiment. With perfect relaxation the grouping, if it occurs, is devoid of subjective accent, a fact which inclines us to the belief that subjective accent is essentially a motor affair.

While there is no absolute need of accent in a rhythmic series, accent makes the establishment of the groups easier, *i. e.*, it assists in the maintaining of a regular periodicity in the specious present. Naturally, the strongest accent comes at the beginning of the group, because the first member of the group has to be carried farthest, but the accent may occur in other positions, as we well know.

It is probably true that for the majority of persons, and in the majority of cases, the accents are preferred on the first members of the groups. This we might infer from the accent system which has developed in music. Another fact, which is sufficiently well established, and which also we would all probably be willing to admit without much proof, is that a long interval or pause introduced periodically in a series of sounds tends to throw the sounds into groups limited by these pauses. We must remember, however, that there are subjects who present consistent exceptions to this rule, and that any subject is apt to depart from the rule if some factor suggests another form of grouping. It is not highly probable that a quantitative method of research on rhythm perception can be established on the general validity of any such rule.⁶

Accent has a definite effect on the time-relations in a rhythmic

⁶ See, however, Woodrow, "A Quantitative Study of Rhythm," *Archives of Psychology*, 1909, No. 14, and "The Rôle of Pitch in Rhythm," *Psychological Review*, 1911, Vol. XVIII., pp. 54-77.

series, but this effect is really of no importance for the explanation of the grouping. The general fact is that a small time-interval limited by two dissimilar sensations seems longer than the same objective interval under conditions practically the same except for the limiting sensations being similar. This was brought out very forcibly by the results of Meumann's experiments on time-perception,⁷ although Meumann himself did not notice it, and supposed that there was no uniform result to his experiments. He, however, was expecting to find a specific effect of a weak sound or a strong sound on the interval following it, or preceding it, as frequently occurs in rhythmic series, and did not notice the effect of intensity-difference. In a rhythmic series, the effect of the accent is to lengthen the interval preceding it, or following it, according to which is compared with the other intervals.⁸ This effect comes out in groupings of three or more; with two-groups we can not get at it definitely, for obvious reasons.

The general effect of stimulus difference on the estimation of small time-intervals has been brought out in a number of investigations,⁹ but it has no bearing on the rhythm problems.

When the groups are small and the rate rapid, the contraction of the specious present does not occur at the end of every group, but at the end of every second, third, or even every fourth group. In this case there is a complex grouping; the unit groups are perceived as elements in a larger group, and accent is practically indispensable, for it is only by accent of some sort that the small groups can be set off from one another in the large group. Theoretically, a differential spacing should accomplish the same result, as, for example, when three-groups are given with relatively short intervals between the members of the group, and relatively long intervals between the groups. But practically, subjective accent enters in every such case, even when there is no objective accent.

With simple grouping, *i. e.*, where the periodic change of the specious present corresponds to the single groups, a longer interval between groups is more favorable to the contraction phase of the process; and hence the occurrence of a longer interval every second, third, or fourth interval may determine the grouping in twos, threes, or fours, if other conditions are not too strongly in favor of some other grouping. Here again we find there is no absolute need of

⁷ "Beiträge zur Psychologie des Zeitsinnes," II., *Philosophische Studien*, 1894, Vol. IX., pp. 289-297.

⁸ See Woodrow, *Archives of Psychology*, No. 14, pp. 8-9.

⁹ See Schumann, *Zeitschrift für Psychologie*, 1893, Vol. IV., p. 67; Dunlap, *Harvard Psychological Studies*, 1903, Vol. I., p. 116; Miner, *Psychological Review Monographs*, 1903, Vol. V., pp. 68, 78-79.

this relation; the slate may be cleared in the shortest intervals of the series, if other conditions favor this sort of grouping.

The early members of a group are not present to consciousness as memory images when the last member occurs. It is experimentally easy to hold a memory image of a sound in consciousness until the sound is given again—if the sequence is fairly slow—but at the moment when the new sound occurs, the memory of the old disappears. It is practically impossible to have a sound-sensation and also simultaneously the memory-image of a sound of approximately the same quality. Moreover, the memory image held in the way described requires an appreciable time to arise, and is very decidedly not the sort of thing which is held in the rhythm series.

The physiological schematization of a sensation “present” to consciousness after its physiological process has practically disappeared is not easy. Nor can we simplify matters by assuming continuation of the brain processes. In that case the discreteness of the sensations would be lost. We must in any event construct our brain physiology to fit the psychological facts, and not *vice versa*. The specious present is a function of consciousness and not of the brain states. In the actual present moment—the mathematical present—the particular content of consciousness and the particular brain state *may* synchronize perfectly; we have, so far as I know, no evidence either for or against this assumption. But in the mathematical past, while the content may be speciously still “present,” the brain state, which was never content of consciousness, is simply “past.”

The function of the specious present in other matters than grouping of content factors may be very important. In comparison-judgments, for example, it is undoubtedly a matter of consequence if the compared contents are both held in the same present, or occupy different presents. The historic work on time perception, although it has not given us any very reliable data, suggests the idea that the varying relations of time-interval to specious present had a large share in determining the judgments.

The emotional effect of various degrees of extension or shortening of the normal present—if there is a normal present—offer a very attractive field for investigation. It does seem that a musical unit requiring a rather long or a rather short specious present for its apprehension produces a specific effect, or rather that in the emotional effects of compositions based on such units there are factors which depend on this feature. The difference between the music having a perceptual unit and the music having no such unit—no unit which may be apprehended in a specious present—is striking, and the average man requires considerable training in the hearing

of music of the latter kind before he will admit that it is music at all.

Among those who came near the statement of the above theory of rhythmic perception, I may mention the following. McDougal says: "The whole group of elements constituting the rhythmic unit is present to consciousness as a single experience; the first of its elements has never fallen out of consciousness before the final member appears, and the awareness of intensive differences and temporal segregation is as immediate a fact of sensory apprehension as is the perception of the musical qualities of the sounds themselves."¹⁰ Yet in spite of this statement, McDougal went on to construct a motor theory of rhythm which directly contradicted it. Bolton says: "Does it not, then, seem reasonable, that during each wave or pulse of attention only one undivided state of consciousness can arise?" "The object of the state may be very complex, but it stands as a unit in consciousness."¹¹ Then he reverts to his attempt to interpret Wundt, and explains rhythm as a product of the "unifying activity of the mind," which attempts to "conceive a series of sounds in a simpler form."¹²

It is worthy of remark that Wundt, in the discussion of the span of consciousness with rhythmic impressions,¹³ distinctly avoids bringing into the consideration the periodicity of consciousness or attention of which he makes much in other places. He does schematize the impressions as present simultaneously, but apparently figures them as fading out of consciousness in the same order as that in which they enter, not attempting to establish any connection between the rhythmic grouping and the simultaneous presentation. Again, he says, "Diese Entwicklung des rhythmischen Bewusstseins durchaus zusammenfällt mit der Entwicklung des Zeitbewusstseins selbst, so das unter allen Umständen der im Bewusstsein unmittelbar noch als ein einheitliches Ganzes aufgefasste Takt auch den Umfang einer noch unmittelbar, also simultan im Bewusstsein gegebenen Zeitvorstellung bezeichnet;"¹⁴ avoiding, it seems, the simplest explanation of rhythm, in order to correlate it with time.

The chief recommendation which can be found for any theory in psychology is in its being a fertile source of experimental inquiries. That the theory I am advancing is very fertile will be demonstrated before long.

KNIGHT DUNLAP.

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¹⁰ "The Structure of Simple Rhythm Forms," *Harvard Psychological Studies*, Vol. I., p. 322. Compare with the first sentence in the first paragraph on page 219.

¹¹ *Op. cit.*, p. 155.

¹² *Op. cit.*, p. 220.

¹³ "Physiologische Psychologie," fifth edition, Vol. III., pp. 353-356.

¹⁴ *Op. cit.*, Vol. III., p. 33.

MECHANISM AND VITALISM

THE recent work¹ of Driesch propounding a vitalistic theory has been the object of much discussion. While appreciation of the detailed analysis of those phenomena which are claimed to be peculiarly vitalistic has generally been expressed, criticism has been directed upon the fundamental contention and the argument upon which it is based. This contention is that certain phenomena of living nature are of such a character that a physicochemical explanation of them is inconceivable. Besides pointing out certain obvious inconsistencies in the presentation, the critics, as would naturally be expected, have in the main endeavored to establish the conceivability and even possibility of a physicochemical explanation of the processes in question, by pointing out their analogy to other mechanical facts, both of organic and of inorganic nature. Thus the biologist has been and will be incited to further analysis and more exact research in the field under investigation. To a lesser extent attention has been called to the vagueness and inadequacy of the notion of mechanism employed and to the nature of its implied contrast with vitalism. Now it may be that a keener appreciation of these notions will show that at the basis of the more apparent discrepancies lies a fundamental confusion in methodology. The attempt to carry over one kind of interpretation into a realm where it is inapplicable must entail disastrous effects; and the effort to harmonize the results thus caused may be a hidden source of the more obvious confusions. The consideration of mechanical or physicochemical explanation and, more specifically, the nature of its contrast with a vitalistic theory, will be the subject of this essay. If the result obtained should tend to point out the only consistent method of procedure in the biological field under discussion, it would assist in the removal of an obstacle to the proper direction of scientific effort.

Now it will serve our purpose to present very briefly the essence of the argument in favor of vitalism given in the work under consideration. It is maintained not only that there are certain processes in organic nature which are incapable of being resumed under physicochemical laws or described in terms of mechanics (for the present let us suppose these two predicates interchangeable), but also that any such aim involves a false ideal of science. One main support of this contention is based upon the phenomenon of restitutions. The complicated process of normal morphogenesis, although many of its manifestations call for the assertion of a different agency, may be conceived to have a machine as its basis. But the case of

¹ "The Science and Philosophy of the Organism."

restitutions, the production of a normal organism despite disturbances in the embryo or germ, is in its very nature a violation of a mechanical process. And for what reason? With the reply we approach what we regard as the logic of mechanical explanation. Mechanism involves the principle that similar effects must be produced by similar causes. In restitutions, however, different causes are observed to bring about the same results. A normal embryo produces a normal organism; an embryo altered in certain ways also produces a normal organism. Such a process is therefore essentially incomprehensible in physicochemical terms, and requires the positing of a factor of another order to explain its nature. (For the sake of simplicity we may disregard the positive content of this factor.) Obviously the force of this reasoning is dependent upon the meaning attached to the idea of cause. Now the only significance which the conception of cause, considered as the fundamental principle of physicochemism, may have, is that events must be conceived to be conditioned by certain other facts, or, more generally, there is a factor of determination in processes called mechanical. This is the hypothesis which is involved in mechanical explanation. But, it must be observed, such a conception of cause is not serviceable for concrete analysis. For here the specific facts in which the relation is supposed to inhere are themselves the object of investigation. Again, if we state the matter in another way and say that identity of antecedent and consequent is the underlying general principle, then it is the task of science to discover the particular occurrences to which this identity must pertain.

Has not Driesch been blind to the distinction between the general import of cause and the particular illustrative case? In the assertion that in restitutions there is a violation of the mechanical principle of causation there is the assumption that the only determining fact of a normal organism is a normal embryo. Therefore if a changed normal embryo results in a normal organism, we have an instance of the same effects following from different causes, and mechanism is not only inconceivable but contradicted. To this we object that the normal embryo may conceivably contain elements unessential to the production of a normal organism. It is towards the discovery of the essential factors or specific causes that the efforts of the critics are largely directed.

The only justification for designating a process as mechanically inconceivable is the characterization of it as essentially indeterminate. Such a description of the phenomena in question is not only without evidence, but is contradicted by the discovery of laws governing restitutions. For peculiar alterations of certain embryos are shown to result in specific organisms. These processes are found

to be calculable and must be denoted determinate. The function of investigation is to discover the particular factors which are the instruments in the determination. Through repeated experiment the laws governing restitutions have been formulated, and these laws assert the fact of physicochemical processes. We can and do predict the character of the changes in restitutions in the same sense in which we predict variations in normal morphogenesis. Normal morphogenesis and restitutions attest the fact that the accidental elements have not yet been distinguished from the essential, and thus the ultimately causal is yet to be sought.

The question whether bodies exist which are essentially indeterminate is a problem for solution. It may be a task of biology to locate just where, if at all, in the scale of life, an activity must be regarded as arbitrary. But the argument above, or any train of thought following a similar line, not only has not proved vitalism for the case in question, but has led to the conclusion that mechanical explanation is the only one to be consistently desired in the interest of science.

It must be noted further that observation of spatial processes can never give ground for the assertion that a portion of matter is essentially indeterminate or inconceivable mechanically. The most that can be affirmed on this score is that all attempts to comprehend the variations have failed. And, I take it, it is sympathy with this view that has led to the opinion that "the scientific analysis of psychic phenomena must be sought in physicochemical laws."² But such a theory, in addition to barring out the peculiarly psychic (if this term has a meaning which is not physiological), is not demanded by the logic of events. Its value for the biologist lies in its employment as a working hypothesis in investigations whose ideal is to approach the limit of mechanical activity in the organic world. It is not herein denied that from other sources there may come evidence which shall lead us to regard an activity as arbitrary.

And the existence of activities which can not be regarded as irresistible is in no way inconsistent with the tenets of mechanism or with the universality of its most general principle, the conservation of energy. For mechanism may be comprehended as applicable to a restricted sphere of nature in which the law of causation obtains. It is limited to that field in which determination is the fundamental postulate.

Now if we turn our attention to a search for the motive which has inspired the theory of vitalism, the following passages are suggestive: "Wherever there is life in the universe something happens which is not present in the given mechanical constellation as such. Some-

² Jacques Loeb, "Die Bedeutung der Tropismen für die Psychologie."

thing is introduced, not changing the quantitative side, but changing the actuality and direction of mechanical events." Again, "Though of course to deny the logical necessity of a vitalistic conception of biological facts does not imply the impossibility of vitalistic agents being actually at work in them." That is, if these two modes of description are applicable to the same process, it must be that different aspects of one process are denoted. Attention is directed to a quality of a mechanical process. Morphogenesis is a phenomenon which is physicochemically comprehensible, and this description of it does not rob it of such features as the greatness of its complexity and the fact that this complexity makes for the production of a being capable of entering into such relations with its environment as tend to maintain its existence. These characteristics mark its distinction from inorganic occurrences. The unity in the process, the relation of part and whole, does not make it more non-mechanical than many inorganic processes, and this so-called "regulative" feature has been discovered to be precisely the underlying assumption of mechanical explanation. In the phenomena of restitution, the still more apparent fact of adaptation dependent upon a greater degree of complexity has been the logical basis for designating the processes as essentially non-mechanical.

If the view just sketched be correct, then Driesch's main contention has been reduced to denoting the very different qualitative descriptions of certain physicochemical processes. The profitable contributions of the theory of vitalism are these: it has emphasized the peculiarity, in respect of their results, of specific physicochemical processes, and it has thereby directed attention to the significance of the physicochemical process itself. But the interpretation of such problems does not belong to the restricted sphere of biological explanation and, being confused with the narrower questions, has justly aroused vehement protest on the part of scientific investigators.

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NEW YORK CITY.

REVIEWS AND ABSTRACTS OF LITERATURE

The World a Spiritual System. JAMES H. SNOWDEN. New York: The Macmillan Company. 1910. Pp. 310.

The present work is an outline of metaphysics avowedly for the uninitiated. Pervaded as it is with a genial dogmatism, confessedly loose in argument, and punctuated with citations from the poets, it would be easy for the professional philosopher (if such there be) to view it askance. The style is not only untechnical, it is often highly rhetorical and at times

edifying. Still, it is to be remembered that the author is writing for a presumably edifiable public, not for philosophers, who are past edification.

In view of the limits set by this sort of popularization, one is surprised that the author says so much that is worth while and with such fundamental sanity. The introductory portion of the book, dealing with the nature of metaphysics, is the most satisfactory. The crucial chapter is on "The Nature of Objective Reality," where the view is developed that, as the soul, which is reality itself, consists of "the self in its threefold nature of thought, sensibility, and will, and characterized by unity, growth, law, habit, freedom, and purpose": so "the fabric of the phenomenal world is woven of the same threads, . . . thus showing its ontological cause to be of the same piece with the ontological soul of man" (p. 177).

The idealism thus proclaimed is monistic, reminiscent chiefly of Berkeley and certain phases of Christian theology and calling to its aid Kant, Schopenhauer, Lotze, Bowne, Royce, and Ormond, to the last of whom the book is dedicated. The author best summarizes his view in these words: "God is the original, underived, infinite Spirit, and finite spirits are derived from and dependent upon him. The world is God's consciousness organized into a system of thought and sensibility and will. . . . Things are centers in the consciousness of God developing in increasing degrees towards selfhood. Animals are partial selves still included within the consciousness of God, but human spirits have reached selfhood and so have passed the point of detachment from the divine Mind into personality. . . . God's mind acts upon our minds so as to induce in us our sensations, which are developed and organized into our consciousness of the world, the human body being the special point of contact and means of intermediation between the divine Mind and human minds" (p. 223).

It would be unfair to criticize the present work as one would a treatise meant to be technically exact. The function of the critic is to ask whether the book fulfils its aim and whether that aim is a good one for metaphysics. Now, the progress of metaphysics can perhaps be furthered by inducing an increasing number to become interested in the solving of its problems. Perhaps there are sound reasons for the popularizing of philosophy. The philosophers are recruited from the masses and presumably the masses need philosophy. But is there not a degree beyond which popularization should not go, in the interests of both the public and philosophy? The *spirit* of philosophy at least should be imparted and, in the interests of that spirit, careful definition of problems and exactness of argument should not be sacrificed to rhetoric. To be sure, one will lose some of his public if he is too particular, but it is better to lose some of the public for the sake of philosophy than to lose philosophy for the sake of the public. The present work, in spite of obvious virtues, is somewhat too dogmatic, somewhat too loose in logic, and entirely too eloquent in style to introduce the public best to the meaning of metaphysics in general and of idealism in particular. Dogmatically (for instance) the author assumes his crucial position that the

self knows itself immediately as noumenal or "ontological" reality. The reader is allowed to depend upon rather loose logic when he is told that because the world is intelligible and beautiful and active it is the product of intelligence, feeling, and will. (Possibly some one even of the uninitiated may pause to remark that of course whatever an intelligence can know is intelligible, but that this leaves the noumenal question still open.) Again, a philosophic style, even a popular one, is not best exemplified by describing metaphysics as "closest to the sun of truth and the stars of eternity," nor in the persistent use of the language of faculty psychology. Nor should the public be led to suppose that the rubric "modern idealism" signifies only the unique sort of idealism suggested in the present volume (p. 216). In this connection it is pertinent to note that the author takes no account whatever of the modern pluralistic idealists.

The book ought to be especially welcome to religious readers as such. Not only is its phraseology reminiscent of the enlightened pulpit, but Biblical quotations are plentiful and all the familiar dogmas of Christianity—inspiration, prayer, the trinity, the incarnation, the atonement, and miracles—are put upon the author's idealistic basis. The book would serve as an agreeable introduction to philosophy in such sectarian colleges as would welcome a metaphysics of the faith.

JAY WILLIAM HUDSON.

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The Precinct of Religion in the Culture of Humanity. CHARLES GRAY SHAW. Swan, Sonnenschein & Co. 1908. Pp. xiii + 279.

The aim of the author is to show that religion has an independent province in human life. Of the method by which he undertakes to do this he says in the preface: "The spirit in which the precinct of religion has been examined is not that of the older noumenalism, still less that of the newer phenomenalism; both metaphysics and psychology are here set aside for the sake of a humanism which seems best adapted to defining the essence of human worship." Just what this humanism is, however, a perusal of the book does not enable one to ascertain.

The author deems that, this being the "age of culture," it is possible to do better justice to religion now than it was during the enlightenment, when the dominant conception was that of "rights." He considers religion to be the religious consciousness, and holds that its nature is primarily *the affirmation of the soul* and the negation of the world. Ultimately, however, religion leads to the recognition of a world-soul and to entrance into a spiritual world-order. It is religion that gives us the three all-important ideas of the personal soul, the unity of the world, and the absoluteness of the world-soul.

The insistence upon the independence of religion leaves rather unclear in what positive relation the author believes it to stand to the other branches of human culture. But we are told that without the philosophy of religion the theory of knowledge would never have arisen, that religion has a close affinity with esthetics, and that it shows the true value of morality.

As to the truth of religion, the author rejects the idea of a demonstrable theism, and declares the difficulty in the past to have been that theism never has been put on the basis of religion. "St. Francis with his holy love is more of an argument for God than Anselm with his ontological proof." The real proof of religion is ethical in its nature, and is to be drawn primarily from the exalted types of the religious life.

The material furnished by the comparative study of religion has been drawn upon to a certain extent, but only in a scattering way. The author appears to hold that Christianity should be allowed to exercise a formative influence upon the modern world-view, but he has done far too little by way of supporting such a thesis.

The important positions taken in this book might have been given considerably greater clearness and force by a better ordering of the material as a whole, by a more consistent and vigorous criticism of views opposed to those of the author, and by more real, consecutive reasoning in support of the views adopted.

The style of the book reveals a fondness for neologisms on the part of the writer, and on the whole it must be said to lack lucidity, though occasionally a gift for terse and epigrammatic statement is apparent.

EUGENE W. LYMAN.

BANGOR THEOLOGICAL SEMINARY.

La conscience de devoir dans l'introspection provoquée. PIERRE BOVET.
Archives de psychologie, 1910, Vol. IX., pp. 303-369.

In the five hundred introspections gathered for an earlier study in which the author repeated the experiments of Messer and Bühler on judgment and ideation, appeared a great many references to feelings and in particular to the feeling of oughtness. The present monograph is a detailed study of this feeling, and of feelings related to it, as far as they appear in the said introspections. It is offered as preliminary to a forthcoming study of the moral sentiments.

The chief topics with which the essay deals are:

The directions given to the subject (*la consigne*) considered from the point of view of the experimenter and from that of the subject; the instructions considered as a mental state, as conscious, as unconscious, etc.

The varieties of the sense of oughtness (*sense de devoir*) under three heads: past, present, future.

The affective coefficients of the sense of oughtness: the feelings present during the period of expectancy of the directions and during their apperception; during the periods of choice (when a choice is the task set), of search for the answer, of the discovery of the answer, and, finally, the feelings accompanying the giving of the answer.

In a concluding chapter, states nearly related to the consciousness of oughtness are analyzed and compared with each other and with the feeling of oughtness, namely, the feelings of *vouloir*, *pouvoir*, and *avoir le droit*.

Even though, in this study, problems are set rather than solved, the author deserves congratulation for having replaced the ordinary method

of the student of ethics—casual self-introspection and observation—by the analysis of a large number of introspections produced under determinate circumstances.

The great number of divisions and subdivisions, at times minute and subtle, and the remoteness of several of them from what seem material issues, may perplex and weary the reader. Yet, if he reads carefully enough, he also will become aware of that which forcibly impressed the author, *i. e.*, that "there is hardly anything in the mind of the subject anxious to perform the assigned task which has not its exact counterpart in the mind of a person in the presence of precepts having for him moral significance." Professor Bovet has certainly cleared much of the ground surrounding one of the fundamental problems of the psychology of ethics.

JAMES H. LEUBA.

BRYN MAWR COLLEGE.

JOURNALS AND NEW BOOKS

REVUE NEO-SCOLASTIQUE DE PHILOSOPHIE. February, 1911. *Le concept de loi dans les régularités statistiques* (pp. 5-27): J. LOTTIN. — Statistical regularity allows us at most to conclude the existence of common causes; and the principle of determinism allows us to infer the existence of a necessary connection between these causes and their effects. The most important thing to know, however, is the nature of this connection, which is without the field of statistics. *William James* (pp. 28-57): L. NOËL. — A critical exposition of the philosophy of the celebrated American thinker. *La crise du transformisme* (pp. 58-89): HECTOR LEBRUN. — There is no crisis of true evolutionism. But some laws closely connected with the theory of evolution are now rejected because they are devoid of scientific foundation. Such are Darwin's natural selection and Haeckel's famous biogenetic law. *Faculté du divin ou faculté de l'être* (pp. 90-100): A. GARDEIL, O.P. — Observations on a note of Rousselot's article entitled: "Métaphysique thomiste et critique de la connaissance." *Deux guides dans l'étude du Thomisme* (pp. 100-107): M. BALTHASAR. — Excellent guides in the study of Thomism are Sertilanges's "Saint Thomas d'Aquin" and Garrigou-Lagrange's "Le sens commun." *Le mouvement néo-scolastique* (pp. 107-115): L. NOËL. — A review of the neo-scholastic movement in Europe during the last years. *Bulletin de philosophie sociale* (pp. 116-137): M. DEFOURNY. — A study of the recent contributions to sociology. *Comptes rendus*: Joseph Mausbach, *Die Ethik des hl. Augustinus*: M. DE WULF. *Spinoza's Short Treatise on God, Man and Human Welfare*, translated by L. G. Robinson: A. W. CENTNER. L. P. JACKS, *The Alchemy of Thought*: E. B. BARRETT. A. JOUSSAIN, *Romantisme et religion*: G. WALLERAND. F. B. SEVERAC, *Vladimir Soloviev*: C. MICHALSKI. J. DONAT, S.J., *Summa Philosophiæ Christianæ*: G. WALLERAND. Fr. GABRYL, *Filozofia przyrody*: C. MICHALSKI. F. GILLET, *L'éducation du cœur*: L. NOËL. E. SEILLIÈRE, *La philosophie de l'impérialisme*: JEAN NEVEN. *Correspondance de Renouvier et de Sec-*

rétan: NATALIS. J. T. Beysens, *Natuurphilosophie of Cosmologie*: L. DECKERS. E. Peillaube, *Les images*: E. BLAMPAIN. E. von Cyon, *Eduard Pflüger. Ein Nachruf*: R. F. A. Meyer, *Etude critique sur les relations d'Erasmus et de Luther*: ELNO. *Chronique philosophique. Sommaire idéologique des ouvrages et revues de philosophie.*

THE PHILOSOPHICAL REVIEW. January, 1911. *The Philosophy of William James* (pp. 1-29): RALPH BARTON PERRY. - A classification and exposition of the doctrines contained in the philosophy of Professor James. The writings of Professor James treat of three great topics, "the nature of the human mind, the structure and criteria of knowledge, and the grounds of religious belief." An account is given of each of these topics. *Society and State* (pp. 30-45): R. M. MACIVER. - A criticism of modern political principles, maintaining that "they are vitiated by a too narrow Hellenism." The doctrines of Rousseau, Hegel, and Professor Bosanquet are examined and found to contain the Hellenic fallacy of identifying state and society. It is maintained that the two should be positively distinguished. *The Philosophy of Henri Bergson, II.* (pp. 46-58): G. N. DOLSON. - A critical evaluation of the philosophy of Bergson, reducing the difficulties "to three main problems, namely: (1) intelligence and instinct, (2) time and space, and (3) matter and perception." The three problems are critically examined. *Discussions: The Nature of Truth: A Reply* (pp. 59-63): JOHN E. BOODIN. *Rejoinder* (pp. 63-66): RADOSLAV A. TSANOFF. *Reviews of Books* (pp. 67-86). W. B. Pillsbury, *The Psychology of Reasoning*: ELLEN BLISS TALBOT. Charles Werner, *Aristotle et l'idéalisme platonicien*: J. A. LEIGHTON. Josiah Royce, *Race Questions and Other American Problems*: C. A. BENNETT. Wilhelm Koppelman, *Die Ethik Kants*: FRANK THILLY. Ray Madding McConnell, *The Duty of Altruism*: FRANK CHAPMAN SHARP. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE. January, 1911. *L'idée de vérité, d'après W. James et ses critiques* (pp. 1-26): A. LALANDE. - Pragmatism is open to criticism because it omits from its definition of truth that social element of objective thought which is the real differentia of truth. *Le mécanisme de la psychothérapie* (pp. 27-62): A. LECLÈRE. - An application of positivistic method to the study of problems in psychotherapeutics. *L'induction en mathématiques* (pp. 63-71): R. GOBLOT. - Mathematics makes no use of induction, and even so-called "mathematical induction" has no characteristics to make it worthy of the name. *Revue générale. Le problème du transformisme*: SELIBER. *Analyses et comptes rendus.* Stumpf, *Philosophisches Reden und Vorträge*: R. HUBERT. D. P. Rhodes, *The Philosophy of Change*: J. L. SCHLEGEL. A. D. Sertilanges, *St. Thomas d'Aquin*: F. PICAVET. E. Peillaube, *Les images*: L. DUGAS. F. Queyrat, *La curiosité*: L. DUGAS. *Correspondance.*

Aristoteles' Nikomachischen Ethik, Uebersetzt und mit einer Einleitung und erklärenden Anmerkungen versehen von Eug. Rolfes. Leipzig: Verlag von Felix Meiner. 1911. Pp. xxiv + 274. M. 3.20.

- Fletcher, Jefferson B. *The Religion of Beauty in Woman, and Other Essays on Platonic Love in Poetry and Society.* New York: The Macmillan Company. 1911. Pp. ix + 205.
- Hegel, Georg Wilhelm Friedrich. *Grundlinien der Philosophie des Rechts.* Edited by Georg Lasson. Leipzig: Verlag von Felix Meiner. 1911. Pp. xcv + 380. M. 5.40.
- Jacob, B. *Lettres d'un philosophe, précédées de souvenirs par C. Bouglé.* Paris: Edouard Cornély et Cie. 1911. Pp. xxx + 216. 3 fr. 50.
- Macilwaine, Sydney W. *Medical Revolution: A Plea for National Preservation of Health Based upon the Natural Interpretation of Disease.* London: P. S. King and Son. 1911. Pp. xii + 162. 2s. 6d.
- Pillsbury, W. B. *The Essentials of Psychology.* New York: The Macmillan Company. 1911. Pp. xi + 362. \$1.25.
- Read, Melbourne Stuart. *An Introductory Psychology, with Some Educational Applications.* Boston: Ginn and Company. 1911. Pp. viii + 309. \$1.00.
- Young, John Wesley. *Lectures on Fundamental Concepts of Algebra and Geometry.* New York: The Macmillan Company. 1911. Pp. vii + 247. \$1.60.

NOTES AND NEWS

THE following changes take place in the department of philosophy in the University of Michigan: Professor Alfred H. Lloyd has leave of absence for the year 1911-12. During his absence Charles Milton Perry, Ph.D. (Mich.), joins the staff as instructor in philosophy. Dr. John F. Shepard, instructor in psychology, has been advanced to an assistant professorship. An additional instructorship in psychology has been created. It will be filled by Henry Foster Adams, Ph.D. (Chicago). Harry Wolven Crane, A.B. (Mich.), at present assistant in psychology, has been elected to the George S. Morris memorial fellowship for the year 1911-12.

AN International Congress of Monists will be held at Hamburg, September 8-11, 1911, with Professor Ernst Haeckel as honorary president, and with the participation of Professor Sv. Arrhenius, of Stockholm, Professor Fr. Jodl, of Vienna, Professor J. Loeb, of New York, and Professor W. Ostwald, of Leipzig.

THE Kantgesellschaft invites competitive essays on the subject "The Progress in German Metaphysics from Hegel to Hobart." There are two prizes, one for 1,500 marks and one for 1,000 marks. Papers should be addressed to Dr. Liebert, Berlin, W. 15, Fasenenstrasse 48.

THE death is reported from Padua of Dr. Francesco Bonatelli, Professor of Theoretic Philosophy at the University of that town, and for some time co-editor with Professor Mariani of the paper *La filosofia delle scuole italiane*.

AUGUSTE COMTE's "Early Essays on Social Philosophy," translated by H. D. Hutton, are included in Routledge's New Universal Library (Dutton). Frederic Harrison supplies an introduction and notes.

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PSYCHOLOGY AND SCIENTIFIC METHODS

THE INADEQUACY OF "NATURAL" REALISM

A FEW years ago idealism in one form or another seemed to have definitely won the day in philosophy. But very recently the realistic heresy has sprung up again, and it is now rampant at Columbia, at Harvard, and at many another American university; it is even gaining ground in orthodox England. This contemporary movement, called by some of its leaders "natural" or "naïve" realism, is in large measure a reaction against the excesses of absolute idealism; the fathers have eaten sour grapes and the children's teeth are set on edge. Realism calls a halt to the building of metaphysical air-castles, and bids us keep our feet on *terra firma*. To all who long to see philosophy forsake irresponsible speculation and cleave to a surer if slower procedure, it is a welcome change. But just what *terra firma* is, how we may most accurately describe it, in the large, is not an easy matter to settle. In the opinion of the writer of this paper "natural" realism gives us an inaccurate and inadequate account of the facts, and must be supplanted by a critical realism which shall be based on the insight which idealism has contributed to philosophy.

There are, as a matter of fact, several mutually incompatible theories in the field, each of which purports to represent the instinctive realism of the natural man. These theories are not always kept distinct, and the difficulties in the way of one theory are often met by an unconscious shift of base to a point of view which is really quite different. The particular type of "natural" realism here opposed may possibly, when the full light of day is let in upon it, find no champions. So much the better, then; we shall have got out of the way a theory which, even if not consistently held by any of our contemporary realists, figures largely in their writings and gives much of its plausibility to their position.

This particular type of realism, then, is that most "natural" of all realisms, the belief that the very data which we have in experience slip out of experience and continue to exist, with the same qualities, when no one's experience includes them. It would seem to be the

belief indicated by Professor Montague's contention, agreed to by the notable Six, "that things known may continue to exist unaltered when they are not known."¹ It is the belief that the "this" which the idealist calls "content of experience" is the very "object" which the physicist speaks of as "out there," as the cause of our experience. By a critical realism, on the other hand, is meant a realism which holds that the "this" of experience, the object perceived, is numerically and qualitatively different from, and exists later in time than, the thing-in-itself "out there" which causes the experience.

The critical realist has much in common with idealists of the stamp of Berkeley and Mill. Both idealist and critical realist believe that these data which they have and describe exist only as elements of this particular experience—whereas to the "natural" realist the data of experience are permanent existences, now in some one's experience, now in no one's. It is a further consideration which parts the critical realist from the idealist, the latter holding that the cosmos is merely a construct, that there are no "absent objects" save in the sense of "permanent possibilities of sensation," while the former believes in a cosmos which really exists, in the same sense in which this "now" of experience exists. The difference between the natural realist and the critical realist is, then, that the former's universe is made up of the very "thises" of human experience, eked out with other contiguous "thises"; whereas the latter's universe is made up of realities which are pictured (to some extent) by the "thises" of experience, but lie beyond them. To the former, a man's experience when he looks at the starry heavens really includes a large percentage of the cosmos; to the latter it is but a momentary phase of this particular human experience, which bears the same relation to the universe as the man's body, or brain, does to other physical things. To the natural realist there is just this world that we see and touch, with our individual experiences flitting about in it like search-lights, illuminating portions of it that preexisted. To the critical realist all the things-I-see-and-touch are but visual-and-tactile-experiences within my total experience; each total experience is a microcosm, surrounded by a sea of things-in-themselves which never come within human experience at all; the macrocosm is much bigger than the natural realist imagines, it includes the separate streams of consciousness, with their subjective and objective experiences, and in between them a world of ejective realities which those reduplicated objective experiences more or less fragmentarily picture.

It must be confessed that the *prima facie* plausibility is with the natural realist, and the label of his system therefore legitimate. Our

¹ "The Program and First Platform of Six Realists," this JOURNAL, Vol. VII., p. 396.

contemporary realists never tire of telling us that their view "is the natural, instinctive belief of all men,"² and frankly shift the burden of proof to the shoulders of the sophisticated critic who would deny the belief of the "natural man" whose heart is pure of metaphysics. Now some of us are strongly inclined to suspect that your "natural man" is hopelessly unanalytic, and that if philosophy has any useful function in the world it consists largely in correcting his notions and making distinctions where his vague and intermittent reflection has discovered none. Moreover, the "natural man" is an unreliable witness to put one's trust in; he has been made sponsor to not a few theories for which we may well doubt his willingness to be responsible. At the outset he gives his unguarded assent, but when close inspection reveals all that the theory implies he backs out. The writer's experience with such "natural men" as he has caught is that when the implications of "natural" realism are relentlessly unfolded, they reject it with horror. Whither will the natural realist turn, then, if his own witness bewrayeth him?

It is significant that reflection has never been long satisfied with "natural" realism. It is precisely the difficulties in this obvious view that have precipitated many philosophic struggles; there are grave reasons why we must pass on beyond the surface look of things if we wish to construct a world-picture compatible with all the facts. To the "natural man's" assertion that we have our world in common—which is the contention of the "natural" realist—we have to reply, How do you know that we do? And we can go on to say, There are cogent reasons for denying that we do, in the strict sense. We *live* in a common world, but each of us is shut off from the rest of the world by the wall that surrounds his own consciousness; our visual and tactile experiences are within that wall and only *represent* what is without. We do not, strictly, have any "this" in common. The reasons for making this denial we shall proceed to note.

I

When we examine our *data*, we find that what we have at any moment, what we then know at first hand to exist, is not a world, but a very limited *field*. We have, *e. g.*, one side of a room, a bodily pain, a wish, and a vague background of other elements; and we have these things *existing together*. Whatever else may exist beyond this little circle of reality is really beyond it, is shut off from it, does not exist in that relation of felt togetherness with these elements in which they exist with one another. It is, partly at least, because of this primary fact that the conception of consciousness has been framed. Consciousness is this little field of reality that is present here, in

² *Ibid.*, p. 398.

contrast with a bigger world believed in beyond it. Or, if you please, consciousness is this peculiar relation, that of *felt togetherness*, which exists between these few data here. Whatever may be beyond this little field does *not* exist in this relation to the elements within the field, and can be proved not to. For the relation is precisely that of being *felt together*; and if those other elements are not felt together with these, then they do not exist in that relation with these. Your wishes and bodily pains, *e. g.*, are not felt together with mine; they exist in a separate field. I may speak of knowing your mind, but I can only mean that I know more or less *about* what is in your mind. In a sense I may say I have the "same" feelings. But that must not blind us to the simple primal fact that those very feelings which *you* are having—your bodily pain, your wish—are not felt with, do not exist in this relation of felt togetherness with, my pains and wishes, as my pains and wishes do exist with the other simultaneous elements in my field. It may be said that the absence of perceiving a relation is not the same as perceiving the absence of a relation. But that objection ignores the peculiar nature of this relation, which is nothing but that of being *felt together*. It is not the perceiving of a relation, but the existence of the relation, that is in question.

Suppose, then, you and I both say, "I see this tree." I have a "this" within my field which I call "this tree." It exists in the relation of felt togetherness with all the other simultaneous elements in this field—with, for example, a wish of mine. You likewise have a "this" within your experience which you call "this tree"; it exists in the relation of felt togetherness with a bodily pain of yours. Now the "this tree" in my field does *not* exist in the relation of felt togetherness with that bodily pain—as it *does* exist in that relation with my wish. The difference here is ultimate and indisputable, can be verified by any simple act of introspection. And if it is granted, the theory of natural realism is definitely refuted, by the logical canon of identity. The "this tree" in the one field exists in the relation of felt togetherness with a certain bodily pain; the "this tree" in the other field does not exist in the relation of felt togetherness with that bodily pain. A "this tree" that is in a certain relation can not be a "this tree" that is *not* in that relation. Therefore they are not the same "this tree" element. The "this" of your experience can not be identical with the "this" of my experience; they are two experiences, similar no doubt, but numerically different, one in your field, in your experience, in your consciousness (as you prefer to put it), the other in mine. The two fields do not overlap and include common elements; the world is, as the idealist maintains, a world of separate microcosms.

The natural realist and the absolutist have much in common—sworn foes as they are. They take common cause here, and maintain that though *I* do not feel this “tree” element with the bodily pain, they nevertheless are felt together by you, or by the absolute. Leaving out the implications of personal pronouns and capitalized absolutes, this means that though a felt togetherness between these two elements doesn’t exist here, it exists somewhere else. But that it doesn’t exist here, as a part of the felt togetherness of this field, is what we are affirming. There exists here and now a felt togetherness that extends so far *and no farther*. *This* field of felt togetherness does *not* include that pain. There is no boundary anywhere within this field; what is anywhere within it is in the felt together relation with what is anywhere else within it. But there *is* a boundary *about* it, that shuts out that pain. If there were not, all the rest of your field would be felt together with my field—our two consciousnesses would coalesce, we should be for the time one person. What need, then, of laborious mind-reading or elusive telepathy? The fact of this wall, this psychological horizon, this boundary to a field, is a perfectly definite fact, not to be glossed over. Such a wall exists between “this tree” No. 1 and that pain; it does not exist between “this tree” No. 2 and that pain. Psychology has not been talking in meaningless terms in speaking of my sensation and yours. I have avoided this phraseology, which might be deemed partisan; but the facts stand out nevertheless. The world will not be squashed down so small as the natural realists wish; there remain my walled-in field and yours and everybody else’s, which never overlap or intersect.

II

This truth comes out still more vividly from a consideration of the *qualitative* difference between my “this tree” experience and yours. Data which are qualitatively different can not be numerically identical; and no “this” in my experience can ever be exactly the same, qualitatively, as any “this” in your experience at the same moment, could not be unless our bodies were exactly alike and occupied the same place in space, *i. e.*, in idealistic terms, unless *every* element in our two experiences were identical; in which case we should be one and the same person.

My present “this tree” may be, for example, a small, indistinct bluish object, while yours may be simultaneously a large, distinct gray and green object. A small bluish “this” is not a large green and gray “this.” There is of course a practical sense in which we may call them different “aspects” of the same “object,” the “object” being thus a construct. All of these “this tree” experiences have the same *function* in our experience, and according to

critical realism represent one thing-in-itself in the real world. But these various data are not the same datum, they are very different existences. So when I have that tactile experience of roughness, roundness, and hardness, etc., which I also call "this tree," I have a datum utterly disparate from the visual "this tree." The two "thises" go together, the one always being a sign of the other; they have, again, the same function, occupy the same point in the conceived objective order; but they are totally different data. They may all be thought to exist, as the natural realist believes they do, permanently and independently of their togetherness with the rest of my experience; but *they would not be the same thing*. It is their function that is identical, not their being. What exists is a vast number of qualitatively different "thises," evanescent according to our theory, permanent according to natural realism; on any theory we only *have* them as evanescent, and must recognize that no two of them are exactly alike.

If we believe, then, that each of these "thises" that we have in experience is a permanent existence, we have a marvelously multiplied world. A thousand, a million different "thises" permanently exist as "this tree"! Disparate as they are, they can not be squeezed down into one simple object, and we have a world reduplicated *ad infinitum*. On our theory the really external objects, *i. e.*, the ejects, are simple existences, and these millions of "thises" exist merely (as we discover them) as transient bits of our human experience. But just as the absolute, if it is to include all the contents of all our minds, must contain a million reduplications of "this tree," so nature, on the theory we are combating, must contain a million trees where we thought there was one. Such a reduplication, the literal carrying-out of the "natural" realist's contention that "this"—this very "this" of experience—exists permanently, is repugnant even to the view of the "natural man," who, if he unwarily agrees with the "natural" realist's first assertion, agrees rather with us when the implications of the two theories are shown. We give him a simple, homogeneous external world; "natural" realism does not.

III

Among the other possible objections to natural realism there is one that may be briefly mentioned here—the time objection. When I look at a star, the critical realist expresses the facts as follows: Within my field of experience (or consciousness) exists this visual element, a-twinkling-point-of-light-out-there. The real star, the star-in-itself, is separated by a long succession of events (pictured by the million-mile-long ether line of the physicist) from this experience-of-a-twinkling-point-out-there. Suppose the star burned out (or

whatever stars-in-themselves do that we call burning out) a thousand years ago; this experience of mine is nevertheless a reality now. But according to natural realism it is the real star which my experience now wraps around and includes, not a something which represents it. That is to say, my experience now includes something which (unless we reject the conclusions of astronomy) does not exist now, has not existed for a thousand years! The qualitative difference between this twinkling-point-of-light and the real star, so vast and complex, should have taught us that the one is but a picture or sign of the other; the gap between their existence in time should be conclusive evidence.

Of course, what is true so strikingly in the case of a star is true less strikingly, but none the less true, in the case of all objects. The "real" object always exists earlier in time than the perceived object, which we hastily assume to be the "real" object, yet which is really but an element in our own experience, and not the object, or object, which exists in and for itself.

IV

We have been arguing so far about the world of objects, or objective experiences; meeting the natural realist on his own ground, and seeking to show him that we have more of a reduplication than he realizes, and that if this reduplication is a matter not of evanescent existence in human experience but of permanent existence, we get not a simple, homogeneous world, but as many different *worlds* as we have *experiences*. Which is the better explanation of our experience of objects—a million streams of human experience, with a sea of simple things-in-themselves in between (so to speak), or a million worlds?

We may now point out, however, that "natural" realism is at its best when talking of physical objects; the theory was obviously framed to explain them. It proves much more inadequate when we wish to explain the "subjective" elements in experience—wishes, hopes, intentions, dreams, ideas, memories, and the rest. Now these elements of experience are perhaps as numerous and perhaps as important as the objective elements; and until an explanation of their existence is forthcoming, this theory is much less plausible than our critical realism, which offers a consistent explanation of their origin and relation to the objective elements. What sort of existence can a wish or a memory have outside of a conscious experience? Various fantastic theories have been put forward by the natural realists to account for these "inner" experiences; not having any observable place in the spatial world, they are relegated, according to some accounts, to a non-spatial world which simultaneously exists, elements from both worlds joining together to form experience. How this

taking partners occurs remains vague. How, moreover, in a world of objects experience of those objects can come in, where it comes from and goes to, is a mystery. This peculiar relation of togetherness-in-a-field, which is consciousness—how does it come to exist in a world of spatial and temporal relations? We have not space here to describe how critical realism explains these important facts; we shall merely assert that it has an explanation, and remind the “natural” realist that until he has one his theory is far from rounded out to such a dealing with the whole situation as shall command our attention.

According to critical realism, our fragmentary objective experiences are not parts of the really external world, they are pictures in our consciousness, or experience, of fragments of a homogeneous world which is really external to our experience and never comes within it at all. The conclusions of physical science are expressed in terms of our experience, but hold good symbolically of the world of things-in-themselves which forms the real environment of a human conscious experience. This doctrine meets the need, which “natural” realism can not meet, and which idealism does not try to meet, but which all men feel, of believing in a real, simple, homogeneous external world surrounding our narrow fields of experience. Whether the doctrine is true, and what the positive arguments are which support it, would be matter for another paper.

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THE FACULTY DOCTRINE, CORRELATION, AND EDUCATIONAL THEORY. II

V. THE METHODS OF SOLUTION

ALL doctrine which is to have pragmatic value, that is, which is to result in exhortations—the normatives rather than the normals of science—must issue in some definite practise which can be definitely tested. Unfortunately, the ordinary work of schools and colleges is so complex, and so many factors enter in as constituents to the results, that, though each side can claim the highest successes for its own doctrine, there is no evidence which opponents will accept. There is much valuable and interesting work already done by psychologists bearing on the issues previously mentioned; but they have mostly used units of work which educationists declare to be trivial and mechanical and therefore to have no or little bearing on the higher mental processes with which teachers are mainly concerned. It is argued further that to correlate the results of work in school subjects is useless, because no school subject is homogeneous mentally;

perception, memory, imagination, and reasoning are all involved and involved interdependently; and as one can not get one's units even approximately pure, the correlation of school subjects proves nothing scientifically. I ask psychologists if it would not be well to meet these objections by correlating certain mental processes within these school subjects themselves, using, doubtless, specially prepared exercises for the purpose, but still such exercises as may or can form part of ordinary school work.

First of all, then, we shall avail ourselves of the methods of correlation which are now readily at hand. If a mental process *A* is highly correlated with another mental process *B*, there is some presumption that a connection exists.

At the very lowest, such a relation enables us to infer from the quantified presence of the one to the quantified presence of the other; not indeed, inevitably, but with different degrees of probability. This is valuable knowledge both to the teacher and to the examiner; it will help the teacher in the classification of his children; and the examiner, if he knows the correlations, can cut down the number of separate tests which he will have to make.

But the teacher wants to know more, and he is apt to take the expression of a correlation as implying cause and effect. If some memory process, for example, were highly correlated with some process of imagination, he would suppose that, by training one, if it could be trained, he would be helping the pupil to improve in the other.

Is this reasoning justifiable? I fear not. Logically speaking, correlations are mostly between synchronous performances or attributes. But they *may* be sought for between antecedents and consequents, and if we can get them, however roughly, in the second form, we shall convince the educationist that experimental psychology has something to tell him of real importance to his work. The teacher is in search of the results of training in various functions, and of the results of the transfer of training, if any, from one power or faculty to another, from one subject of instruction to another. Correlations between coexistences are not all that is wanted; what is wanted also is direct experiment on the possibility of training and the possibility of transfer of improvement. And we must use tests which appeal to the educationist as having actual relationships to school work. What the teacher wants to know is the productive activity of his work, not merely the static relationships between the different parts of it. The early writers on correlation never overlooked the fact that correlations were not causes. Professor Karl Pearson in his "Grammar of Science" especially warns us that they are not. But there is a strong tendency, often realized, to regard correlation as

implying more than a relationship of mathematical function. It is taken to mean a real relationship of mental functioning. Nor is it merely educational theorists who make this error. In Professor Hugo de Vries's "Plant Breeding,"¹ there is a significant sentence, especially as, in other paragraphs of the same chapter, he has clearly said that correlation may imply coincidence merely. The sentence runs, "In all such cases there can be no doubt that the coincidence is a real correlation and that the cause which darkens the flowers is the same as that which darkens the seeds." But the correlation is just as real in the case of the coincidences as in the case of causal correspondences. It is the vague notion that correlation *means* causal connection which gives rise to sentences like this.

What, then, can the establishment of correlation do for us? We wish, for example, to find the relations between two mental functions or two groups of functions. First, let us deal merely with their co-existence. To make my observations more precise and perhaps thereby clearer to educationists, let us suppose we set out to measure the relationship between the accuracy of numerical computation and accuracy in arithmetical reasoning.² Expressed in teachers' language, the question runs: Do those who work their sums most accurately numerically also solve arithmetical problems better than those who are inaccurate numerically, that is, in actual addition, subtraction, multiplication, and division? That these powers may be sometimes disjoined we know, if M. Poincaré's evidence be accepted. "Quant à moi," he says, "je suis obligé de l'avouer, je suis absolument incapable de faire une addition sans faute," and he speaks of Gauss as an exception among mathematicians, for he was both a brilliant mathematician and "un calculateur très précoce et très sûr."³ And I have heard more than once in educational discussions that Newton could not work a simple addition sum correctly. The statement is usually an excuse for inaccuracy in arithmetic. The implied argument is that accuracy in numerical computation is not necessary to mathematical genius and, shall we say, the expectation that little Tommy, who can not get his sums right, may, nevertheless, some day, become a mathematical genius. The argument would be more to the point if it could be shown that Poincaré's eminent mathematicians and Newton himself could not do their sums *when they were boys*. For men of capacity tend to be bored by the very early stages of a study whose limits they are seeking to extend. From personal reasons I feel quite impartial, for I am neither a good mathematician nor a good calculator. But let us leave this question of adult psychology; it

¹ 1907, p. 244.

² W. H. Winch, "Accuracy in School Children," *Journal of Educational Psychology*, December, 1910, pp. 557-590; and May, 1911, pp. 262-272.

³ *Revue du mois*, July 10, 1908.

is not really germane to the issue. Back, then, to the children. We must measure the functions somehow and, if possible, without introducing artificial variants from the ordinary work of the child. Let us suppose we succeed in measuring one of them. How many measurements must we make? Suppose we make two or three, and endeavor to calculate from these a true value based on the conception that our measures are rather faulty, and that the variability in the measures is due to "errors of observation." If we do, we are running counter to the opinion which all persons hold who are daily and hourly in contact with the work of school children. They insist that the children themselves are varying from day to day and that the variability is in the exercise of the function and not merely in our observations of it. And there is a further difficulty; the functions, unlike physical measurements, will not stand practically still while we are sizing them up. We can not measure a function without producing a change in it, mostly an improvement. And, unfortunately, all children do not show the same rate of change, not even those who start initially at the same level—if we may call the result of the first two or three exercises a level in any true sense. May we say that the first few exercises are a measure of initial ability or natural endowment, and that the later results are measures of general educability rather than of native capacity in the one definite direction? I incline to think that the facts of correlation between two functions under different conditions may appear to lead in that direction. But there are difficulties in the way. Consider half a dozen people just beginning to play lawn-tennis. Is their native capacity to play lawn-tennis shown in their first game, in their second game, in their third game, in their first dozen games, or after their n th game? I suppose, as a matter of common sense, we should say that their "true form" is attained—we are considering these six players only and their relations to one another—when, with equal practise, we could place them in definite order from which, for some time, they do not vary. Jones does not always play the same game, neither does Robinson, nor Smith, nor the rest. But Jones can always beat Robinson and Smith; and Robinson can always beat Smith, and so on. I choose an illustration from the problems of sport because, among Anglo-Saxon peoples, much more anxious thought has been bestowed upon such topics than upon mere workaday affairs. What does such a view imply, if accepted as satisfactory in relation to mental measurements? Some such condition as the following would result. We should need to keep on measuring our function until our list became practically steady. The steadiness required would not be a plateau-like regularity—I am speaking in curves—of A 's successive results. Such steadiness is very difficult to obtain with young people, though, in a

few cases, by a careful arrangement of exercises as to difficulty and time, I have for certain purposes approximately obtained it. But indeed it is not needed to fulfil the condition required. We can rest satisfied that the true position of the pupil in our list of results has been attained when successive measurements do not cause any serious alteration in the relative position of the individuals tested. Expressed in mathematical language, the condition would be fulfilled when the coefficients of correlation between the successive results for the same group or list of children were highly positive. Let us, by and by, accept this position for a moment and see how it bears on much educational work on correlation—I am speaking, be it remembered, purely from an empirical standpoint, I make no claim whatever to deal with the mathematical theory of correlation. But before accepting it, let me illustrate the previous position by another modern instance.

Is there such a thing as general suggestibility? If there is, it is sometimes supposed that if we measure the suggestibility in two functions of a number of individuals, the double series thus obtained will have a correlation highly positive. If there is no or little correlation, we conclude that there is no such thing as general suggestibility. Admitting for a moment that these inferences are valid, how shall we set about obtaining our data and our conclusions? Is it satisfactory to take one or two measurements, say, of suggestibility to temperature sensation, and one or two, say, of suggestibility to visual after-sensations (the so-called visual images), and correlate the two series of results? I do not wish to prejudge the question of the existence of general suggestibility; but I wish to give some empirical reasons for doubting the validity of the method.

Suppose I take ten tests of rote memory for meaningless things one day with a class of children (a class of children approximately of the same mental level and taught always by one teacher), and then, a few days afterwards, long enough for fatigue effects to have disappeared, I take ten other tests of exactly the same character. I shall probably find the positive correlation to be no higher than .4 or .5. Am I to conclude from that result that my tests are of different difficulty and that the difference in their "content" has produced this low correlation? It is a difficult supposition, for reasons which will be apparent presently.

A week later I give a third series which, perhaps, correlates a little more highly with the second than the second with the first. Still the correlation is very low between functionings which appear to us introspectively precisely the same. Can we account for the low correlation by errors of measurement? Hardly; the differences in many of the individual results for set 1, set 2, and set 3 appear much

too large. Is it due to the functional variability of the children? Do they actually do different work on different days? We can readily suppose they might if we tested them in different conditions as to freshness and fatigue, if we repeated the tests at unequal intervals, or on different days of the school week, after different school exercises and different lessons. But if we are careful to avoid all these sources of low correlation, shall we still obtain the sort of results indicated above? I think we shall, in fact, with all the ostensible conditions equal. I have actually obtained the sort of results I have given above. But let us go on with the experiment: a fourth series is given, a fifth, a sixth, and more. Presently there comes a time in which each pupil settles down, so to speak, in his place, and the correlation between two of the later series may rise as high as $+.9$ (Pearson "r" coefficient) and with rank formulæ may rise to unity. This fact would seem to indicate that the initial variability was not due to the differing difficulty of the earlier series one from another, but to a true functional variability on the part of the children: also, that our methods of measurement were not very faulty, for, by a continuation of the same methods, we at last achieve some series of steady results.

We may now regard ourselves as possessing a reliable measure of the function for the period in question. And if we have in similar ways measured another function throughout the same period, we are in a position to find the correlation between them. Precisely what conclusions we may draw from the absence or presence of high correlation between series thus obtained is a question which, for the present, I leave on one side. I emphasize only the consideration that, from the series obtained from one or two exercises (especially those of a novel character) in each of two functions, we can not, at least with school children—I speak empirically only, and of the results with which I am personally acquainted—we can not, I say, hope to find a high positive correlation; for the earlier series, obtained by measurements of *the same function with the same "content,"* do not correlate very highly among themselves. For practical purposes we can obtain a correlation which will serve if we take the totals or averages of three or four sets of tests (given under the conditions referred to above) in each of two functions; but, strictly speaking, we may be fairly certain that our correlation is too low unless we have first obtained steady measurements in the functions themselves. Though then, with adults, there *may* be little of what can be called general suggestibility, still it does not seem that we are entitled to a negative conclusion without more certainty that the measures of the separate functions are reliable.

There is another aspect of the case which I may fairly be charged

with having neglected up to the present, namely, specialization according to subject-matter. Let me illustrate the point by means of an example drawn from experimental work on memory. Suppose we are dealing with immediate rote memory for meaningless things: we set out to test whether the power to remember unassociated and meaningless figures is highly correlated with the power to remember unassociated and meaningless letters. But what precisely are we trying to find out? Are we expecting to find what we want by appealing to cases in adult life in which there may have been a long specialization preceding our experiments? Some of our adult subjects may have done a good deal of linguistic work and the memory of the juxtaposition of letters and words, at first, *bien entendu*, a meaningless juxtaposition with associations only of time and place, inevitably plays a part in all linguistic acquisition. Others may have worked much at a kind of mathematics in which memory for juxtaposed figures plays a considerable part, as, for example, the memory for roots, squares, and logarithms, not to speak of other memorized statistics required in most branches of applied mathematics and science. We can, of course, if it is thought justifiable, find out the correlation between *any* two series of results. We might get some notion of the influence of training if we knew beforehand the probable mnemonic values for persons of the same mental level without training. And that would indeed be valuable. But we usually suppose something rather different. We often tend to think implicitly that, when we have found correlations between two mental functions of a set of students, however variously trained, we have found out a value bearing directly on the truth or falsity of the faculty doctrine, and that we have discovered a value of directive service to pedagogy.

There are, I think, some considerations which make these opinions very doubtful. First of all, the faculty doctrine, except in a form which I attack rather than defend, does not require us to assert that, after various and diverse training, a set of students will be found in whom the positive correlations for these various rote memories for meaningless things are very high. The only form of the doctrine with which I am concerned asks about the relation of potentialities rather than of completed products. I do not for one moment intend to take refuge in mere potentiality. Like other experimenters, I measure potentiality by work done; but, as far as possible, I wish to avoid asserting potential relations when very different amounts of work have been done in the two functions which I am trying to correlate.

Let me put the matter more bluntly and from a pragmatic standpoint. The educationist wants to know whether there is not a kind

of indeterminateness about this rote memory power. He wants to know whether, with equal training in both directions—the learning of letters and the learning of figures—there would not be found, usually, and on the average, a high positive correlation between the two functions. If we work with school children who have learned practically nothing at home, and measure only such children as have been exposed to similar educational environments in school, identity of curriculum, and of methods of instruction, we have a much better chance of discovering the relations of the potentialities. Calculating boys are hardly to the point, they are already specialized. We know that we can use up this memory power, for, by giving exercises hard enough and often enough, we can produce a condition in which, for a time, until fresh growth has occurred, we can obtain a descending series of results. Is it not reasonable to suppose that a long process of training in, say, the memorization of numbers will throw the mnemonic function out of balance and so give us results which, for a time at least in the young, and relatively permanently in those in whom the growth potentialities have been mostly realized and in whom growth is near its limit, will show high values for the results in the memory for figures and low values for the memory for letters? If this is the case, the correlation between the two series of results, when individuals differently trained are the subjects of the experiment, will not be very high even if the improvement of the one function produces some improvement of the other within the same mind.

There is a further condition necessary to success if we are trying to measure the correlation between two mental characters. Let me illustrate as before by means of the rote memory for figures and for letters. If we give so many letters for one test, we must give the same number of figures for one test. If we consider the accuracy or otherwise of the order of the figures, we must do the same with the letters. If we arrange the letters in rows of a certain number, we must do the same with the figures. If we allow a certain time for the memorizing of the letters, we must do the same with the figures. And we ought to measure individuals who have had no specialism in their training. Also we should measure the functions under equal conditions as to the subjects, freshness, and fatigue. If, for practical purposes, we are unable to fulfil these conditions, we must be prepared to accept our coefficient of correlation with the full consciousness that it is probably too low.

Suppose we make the functional conditions the same and are careful to take enough measures of each individual's work, we shall find, I venture to suggest, as far as school children are concerned, a number of rather high positive correlations between most of the quali-

ties which we are accustomed to consider as intellectually good. Let me assume this result and ask what it implies.

VI. HIGH CORRELATION AND FUNCTIONAL CONNECTION

May we infer functional connection from the presence of high positive correlation between two functions?

Shall we, from the general establishment of high correlation, find ourselves back again in the full flood of the faculty doctrine, nay, even more, back to a belief in the approximate unity of all mental function? The mathematical theory of correlation—I speak as a scribe or pharisee, accepting the authority of others—does not require us to go so far; and on empirical evidence, I should decline to go. Let us look at the logic of the question for a moment.

Two functional quantities α and β appear to vary together, and let us suppose that the establishment of high correlation of α and β comparatively for a number of different individuals has entitled us to assert that α and β vary together within the same mind. One function may cause another; they may both be dependent upon a common cause, or they may be merely coexistences. It is hard to believe the latter, though one school of psychologists and philosophers in the doctrine of psychophysical parallelism are pledged to it. If they depend upon a common cause, it may be one which is inaccessible to our operations. But our method would be to *try* to find it, operate upon it, and see if it produced these correlated variants α and β . Of course, if they were causally related we could operate on each and see if we could thereby produce variants in the other. It seems obvious that high correlation sets us a problem of connection. It does not *ipso facto* enable us to conclude that a relation of interdependence exists.

VII. LOW CORRELATION AND FUNCTIONAL CONNECTION

Among educational psychologists, as I have said, it is frequently believed that a high correlation between two series of measurements in different individuals indicates that there is such a connection between the measured functions that growth in one is correlated in a highly positive way with growth in the other; and that improvement produced by training in the one is transferable to the other. Professor Thorndike, a long time ago (I think in the *Psychological Review*), pointed out to educationists and psychologists that these conclusions do not follow from the existence of positive correlation, and I have dealt with these problems in a preceding section.

But I now approach an issue in which I believe educational psychologists to be unanimously against the opinion which I shall hesitatingly suggest. I am going to advance the possibility of functional

connection with low correlation. I speak always, be it remembered, of the mental powers of school children, and I speak always empirically. Suppose we measure a number of individuals in two functions, say, in rote memory for meaningless things and substance memory for stories.⁴ We give three or four tests or more in each function, and find the correlation between the total results of the measurements of the two functions. With school children of nine, ten, and eleven years of age, this correlation is found to be decidedly low, perhaps scarcely twice as great as the "probable error." Yet practise in rote memory for meaningless things will, with these children, produce a decided improvement in their substance memory for stories. That is, there is a real connection between these functions though the correlation is small or doubtful. How can this be?

I make the following suggestion very tentatively. We are accustomed to measure the correlation between two functions *in the same mind* by seeing what relations of magnitude exist in functions α and β possessed by Tommy Brown, as compared with the magnitudes of the functions α and β possessed by Charley Smith and Johnny Robinson and the rest. Let us suppose that Brown remembers stories better than Smith or Robinson, but meaningless things badly, indeed worse than Smith or Robinson. Smith is intermediate between Brown and Robinson both in memory for stories and memory for meaningless things; and Robinson is best at meaningless things and worst at stories. Arranging in order (of course our cases are much too few in number except for illustrative purposes) we have:

| | Rank in Memory for Stories | Rank in Memory for Meaningless Things |
|----------------|----------------------------------|---|
| Brown | 1st | 3d |
| Smith | 2d | 2d |
| Robinson | 3d | 1st |

There is obviously no positive correlation when we compare one individual with another. Must we therefore conclude that there is no correlation of the two functions within the same mind? Brown's capacity may be big in one direction and small in another *as compared with that of Smith and Robinson*, but an alteration in one of his functions may produce some alteration in the other. To find the connection of functions within the same mind, would it not be best to get a number of measures for the same individual and correlate these?

We can not, however, simply take a number of measurements of function α and then a number of measurements of function β in the

⁴ W. H. Winch, "The Transfer of Improvement in Memory in School Children," *British Journal of Psychology*, December, 1910.

same individual and correlate these without further consideration. For there is this further difficulty in the measurement of mental functions, especially in the young. The process by which the measurements are obtained will, almost certainly, produce a variation in the same direction in both functions. The second measurement of function α will give, generally speaking, a higher number than the first, the third higher than the second, and so on. And similarly for the successive measurements of function β . So that we may have produced a sort of correlation by our measurements. We may call this a correlation of improbability. Doubtless, some sort of common factor may be involved, even as vague a one as intensity of attention. How far intensity of attention can operate equally upon two different original endowments in two functions, one large and the other small, and how far it depends for its intensity of operation upon those endowments, are questions which I leave aside at present. We should, in young people at least, be almost certain to find two series of increasing numbers which would give a positive coefficient, even though the functions are not correlated when measured against those of other individuals. It may be interesting to the teacher to know that both functions improve with practise; he probably knew it before. But that is not really what he wants to know. He wants to find real connections directly between the two functions themselves. That is what he understands the faculty doctrine to mean. Perhaps these real connections may exist in the same mind even if there is low or doubtful correlation of the functions α and β when one individual is compared with others. And perhaps that real connection may not exist when positive correlation is found between two series of measured results of two functions α and β for the same individual. How then can teachers find out what they want to know? We seem at an *impasse*.

Let me pursue the matter a little further. Suppose we take Tommy Brown and make a few measurements of function α and a few measurements of function β . If the results are fairly steady we may consider that the totals or averages of these results are a sufficiently accurate measure for our purposes of his capacities in functions α and β . Train function α by additional exercises; and let us suppose we produce an improvement upon his original work in function α . Now measure function β again. We shall be almost certain to find an improvement. May we set this down to the transfer of improvement from the training of α ? Certainly not, unless we know how much is due to the natural growth of the function β , for Tommy is young, and is growing all the time. And how can we find that out? Pending the day when we shall have enough measurements under different conditions to give us approximate values

for things of this kind, we must have "control" cases who have not been trained in function α to compare with Tommy; and this brings us to the method of "equal groups." By this method, one of two groups (of tested equality in function β) is trained in function α , the other is not trained. After a time both groups are again tested in function β . The excess improvement (if any) of the trained over the untrained group may be taken (subject to certain statistical conditions) as a measure of the transfer of improvement. We suppose that, during the period intervening between the preliminary and final tests of function β , the natural growth of the two groups in function β has been approximately equal, and this natural increase may account for a considerable portion of the improvement in both groups. It is, as I have said, only the excess improvement of one group over that of the other which we consider a transferred improvement.

Such a transfer of improvement means, if we have made our measurements properly, a direct relationship between functions α and β . They are related functions; improving α implies the improving of β ; they form, in an intelligible and verifiable sense, part of the same faculty. The mental functions thus connected will, I believe, give "groupings" or "faculties" rather unlike those of early psychology.

VIII. A MODIFIED FACULTY DOCTRINE AND ITS RELATION TO PEDAGOGY

Suppose that, finally, we are not entirely deprived of our faculties; suppose that the progress of experimental research, with more continuous tests and a clearer understanding of what formulæ of correlation can and can not do for us, restores us some of them, though perchance in a different form; what then?

Are we to plunge once more into all the errors consecrated by the old meaning of the term *Formale-Bildung*? Are we to believe, in English phraseology which was once very current, that the education of a scholar and a gentleman sufficeth for all things? Surely not. The answer we must give will depend on the quantitative relations of the improvements obtained by training related functions.

We can train memory? Yes, but to learn the things we need to know (I am speaking only of those things for which memorization is a suitable method) will train our memory as well as give us useful acquisitions. In order to give us justification for purely formal methods we should need to show that, by the formal training of function α , we can produce a transferred improvement in function β which we could not, with equal work, produce by training function β itself.

It is function β we want and not function α . If we can get more of β by working on α than by working on β directly, well and good; let us work for β by training α . I do not wish to deny that cases may exist in which this is possible, but they require experimental proof to determine them, and they are surely very rare cases.

In England, a few years ago, it was very customary, in elementary boys' and girls' schools, to train for drawing from the wrist by drawing first from the shoulder (free-arm drawing). The two functions were part of the same group of functions, they were part of the same educational faculty—the faculty of drawing. The procedure was quite in line with other inferences deduced from the faculty doctrine. No educationist thought it necessary to show that, with normal classes of senior children, the transferred improvement was greater than the improvement produced by a direct attack. Yet such a result is always demanded before the pedagogy of faculty-training is justified.

There is, however, another general consideration. Function β may not be accessible to direct attack. Well, if it is not, our problem is more difficult, but is solvable along the same lines. We must try our probably related functions, keep our records of improvements, and see which transfers most to β . But suppose β is practical efficiency in a trade or profession. Well, even then, we must try to get data of success or failure and compare with preceding educational practises. The results of such inquiries might, I fear, be painfully illuminating to many of us educationists; but if the balanced contentions advanced throughout this paper be sound, such a method is imperative if, in educational theory, we are to do more than oscillate violently between one extreme and another.

One cheering conclusion seems to me likely to issue as the outcome of work on the methods I have advocated. It may, I think, be found that education in the things we need to know for practical purposes, learning, imagining, and reasoning about them, will itself supply much of the training which a modified faculty doctrine would warrant.

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DISCUSSION

A PROTEST

DR. HOLLINGWORTH'S review of my "Text-book of Psychology" contains the following passage (this JOURNAL, Vol. VIII, p. 274):

The two-level theory [of attention] is deliberately expounded in the text, although hidden away in the references for further reading is the confession that

the author "has fallen into the common psychological mistake of generalizing his own experience" (p. 302). The "consolation that the multi-level modes of attention were first observed" in the author's own laboratory seems hardly sufficient justification for concealing them from the student.

The first half of the "Text-book," including the chapter on attention, was published separately in June, 1909; the final proofs left my hands some time before I learned of Dr. Geissler's observations. As soon as these results were brought to my notice, I confessed my mistake ("Thought-processes," November, 1909, 292 f.).

I felt it imperative to make a like confession in the complete "Text-book" (1910). The only available space was a blank on page 302, which gave the "references for further reading" on attention. I therefore inserted forward-references in the text (pp. 278, 290), and on page 302 added the paragraph from which the reviewer quotes. The fact that Dr. Geissler's work appeared after the chapter on attention had been written is indicated, a few lines further down, on the same page.

A thorough revision of the "Text-book" would require the re-writing, not only of Section 77, but also of several other sections. Meantime, Dr. Hollingworth has offered me a public insult. I expect a no less public apology.

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REPLY TO PROFESSOR TITCHENER'S "PROTEST"

FROM one point of view it is unfortunate that a reviewer of a text-book is compelled to discuss his material in the condition in which it comes to his hand, as a finished product. The situation is particularly embarrassing when the mechanical difficulties afforded by the printer's layout render impossible modifications which the author would much prefer to have made. The book referred to in the above "Protest" reached the reviewer in the fall of 1910, unaccompanied by any indication that an earlier electrotyping had made the final form of the text unsatisfactory to the author himself. The supplementary modification (p. 302) of the section dealing with the two-level theory of attention seemed to the reviewer to detract from the serviceableness of a book in other respects so excellent that it at once became a standard reference for his own students. This was an honest impression, and it was recorded with that fidelity to introspection for which the "Text-book" pleads. Professor Titchener's explanation that the reason for the arrangement was mechanical necessity rather than deliberate intention is an adequate one. But it is none the less to be regretted that the mechanical necessity was present and that its mechanical character is not obvious to the

reader. If Professor Titchener considers the previous expression of this feeling to be a public insult I beg him to accept this paragraph as an equally genuine public apology.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Evolution of Mind. JOSEPH McCABE. London: Adam and Charles Black. 1910. Pp. xvii + 287.

This is a book which the reviewer finds difficult to estimate justly, because of the tone in which it is written. The author, it may be remembered, was formerly a priest and a professor of neo-scholastic philosophy, but has now wholly abandoned the theological for the scientific view of the world. He does not seem, however, to have put on the modesty of the true man of science. His general spirit will perhaps be indicated by some quotations from the introduction. After stating that his main problem is whether mind can be brought into the unity of physical evolution, he goes on to say: "My aim is, in short, to bring together whatever facts may be found to bear on the subject in a dozen sciences—chiefly physics, organic chemistry, geology, paleontology, zoology, physiology, psychology, and anthropology—and enable the reader to see whether the great advances which have recently been made in these branches of science have brought us any nearer to a verdict than we were in the days when monists, dualists, and parallelists fought their historic battles. . . . Modest [*sic*] as is the design of making such a synthesis, and although the author has personal acquaintance with more than one stage of the inquiry, it has entailed so much labor that a word of personal explanation should be given. . . . I have, as the works indicated will acknowledge, sought aid in the whole relevant literature of Europe and America."

It will be seen that Mr. McCabe lays claim to an erudition little short of stupendous. Of the validity of this claim, so far as the majority of the sciences above enumerated are concerned, the reviewer is imperfectly qualified to judge: the author seems to deal with facts and theories in an easy and masterful way quite dazzling to the uninitiated and possibly to the initiated as well. When, however, he comes to the facts of comparative psychology, which naturally form the main bulk of his evidence, it becomes more comprehensible how one small brain can carry all he knows. The following list seems to represent the authorities consulted by the writer in this field: the works of Lloyd Morgan and Romanes, Jennings's "Contributions to the Study of the Lower Organisms" (not his later work), Verworn, Loeb's "Comparative Physiology of the Brain" (nothing else of Loeb's, apparently), Hobhouse, Darwin on the earthworm, Preyer on the starfish, one paper of Rádl's and one of Rhumbler's, Dahl on the spider, some (by no means all) of the work of Bethe, Wasmann, and Forel; Mr. and Mrs. Peckham's popular book on wasps (not the monograph), Whitman's essay on animal behavior,

and Thorndike's "Animal Intelligence." He implies that Thorndike has done no work on the primates. Of von Uexkuell, whose writings would certainly seem to belong to "the whole relevant literature of Europe," Mr. McCabe has had an intimation: he calls him "von Uexkuell," throughout, and regrets that he has been unable to trace a paper of his quoted in the "Cambridge Natural History." He is apparently unacquainted with any experimental evidence for modifiability of behavior in the Protozoa or Cœlenterates, and the work of Yerkes is totally unknown to him.

The conclusions which are reached on the basis of the facts thus gathered may be briefly summarized. The only evidence of the presence of mind on which the author relies is the anatomy of the brain. "The only reliable . . . way to infer consciousness is from the structure of the brain." Learning by experience is rejected as a criterion because it occurs unconsciously in human beings. "No one will suggest that the more elaborate nerve processes which underlie our higher conscious states may be found in the animal without consciousness, but there is no reason why the simpler associative processes may not be so found. Unconscious inference is common enough in human experience. The rapid processes of reasoning which superficial writers call 'intuition,' especially in the case of woman, are largely unconscious." The appearance of the cortex marks the beginning of consciousness in the evolutionary series, the stages of which are traced with reference to geological changes in a way which makes interesting reading. Upon the main problem of the book, "whether a new reality or agency beside ether intervenes at some point in the earth's history," a negative outcome is reached. "Frankly, I find no speculation on the origin and nature of consciousness that is worth reproducing, and I assuredly have none to offer. . . . It seems to me quite hopeless to speculate on the origin of consciousness as long as its organ is so wrapped in mystery. . . . At present our knowledge of the cortex, the most transcendently important thing that science approaches, is appallingly meager." Why, then, one may ask, be so sure that mind is impossible before the cortex develops?

The last chapters treat of the progress of mind after its appearance: the most important factors in this progress are held to be the substitution of ground-dwelling for tree-dwelling habits, the successive advances of the ice-sheet, and the great migrations and consequent intermingling of tribes. Whatever the shortcomings of the book, it holds one's attention throughout by its lively style.

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The Unexplored Self: An Introduction to Christian Doctrine for Teachers and Students. GEORGE R. MONTGOMERY. New York and London: G. P. Putnam's Sons. 1910. Pp. viii + 249.

Although all religions of the inward type have been individualistic and empirical, theology has commonly preferred to deal with the universal. Of late, however, the empirical emphasis has invaded even this

cloistered realm, a fact of which Dr. Montgomery's little book on "The Unexplored Self" is one of the most recent indications. It starts avowedly from personal experience, and finds the warrant for its larger constructions in the implications of that experience. On the first page the question as to the worth of a man is raised—an inquiry which carries one at once into the heart of theology, for worth is as distinctly the key-note in constructing a harmony of the future as cause is in constructing a harmony of the past. The author does not argue for his own (Christian) answer, that men are of high present worth, with "unlimited possibility of growth in value"—younger brothers of Christ—but calls attention to it, and sends the reader to his own personal experience for its corroboration. If one does not find an adequate confirmation there, the counsel is to enlarge the personal activities in lines calculated to test the hypothesis of human lasting value; for, he says, "one who plunges into the purposeful activities of society finds the sense of a final purpose (future values) coming as a matter of course." That is, let one explore himself, and bring to consciousness new parts of his nature, and see if they do not harmonize with and confirm the hypothesis in question. This certainly seems to be the logic of Jesus, also (*cf.* John 7:17), but it is a line of inquiry which is matter for scorn to a certain type of philosopher. What have a man's inner experiences to do with the constitution of the universe? The test-tube and the spectrum must decide as to that. Full many of us are evidently in a transition stage as to man's relation to the cosmos. He has been shorn of his ancient dignity as a kind of demigod, a child of heaven and earth, and yet he is still regarded by many as too separate from the cosmos to be treated as a veritable phenomenon, a disclosure of its nature. The author is not guilty of this inconsistency. For him discoveries made in the "unexplored self" are discoveries in nature in general, and replete with implicit revelation. "Analysis," he tells us, "of any or of all experience discloses the two functional variables, value and relation." Reasoning, which he does not disparage, "can not originate the value." It is an empirical datum, in which the self is the cardinal factor. Indeed, the "assurance of reality that comes from preciousness . . . has been perhaps more provocative of discoveries" than "that which comes from inferences."

So, too, the divine rests upon the instinctive functioning of the self at its best. Wonders, whether miracles or natural mysteries, are no proof of it. "There has ever been a perversity in human nature which would equate unknown and divinity. That was Herbert Spencer's primitivism." On the contrary, the divinity of Christ is thoroughly natural, "if by natural we mean those events that fit vitally into human experience." That so often it does not seem so is due to the fact that men are wont to frame a "pompous, magniloquent," unproven definition of God, and then say, "God we have found out about; now, was Jesus his son?" whereas the real problem is, "Jesus we know; now, did he have a heavenly father?" "We reach deity through the highest human." Similarly it is not nature, but life, that witnesses to immortality. Faith

is essentially a proper valuation of the weaker lights of experience, which the glare of coercive reasoning too often shuts out.

The reader will find in these suggestive pages, with their quiet Nazarene style, many familiar (and challenged) teachings set forth in new and persuasive aspects. The least satisfying chapter is that on "The First and Great Commandment." The primacy of love to God is maintained properly enough, but the first reason for it (which should be the main one), that "there is much more to life . . . than merely loving one's neighbor," is left in negative and hence unconvincing form. Its content is not given, nor is the "much more" suggested. Why does not some Christian (or Hebrew) ethicist develop the content of the commandment of supreme love to God, and bring his ethical system into touch with that of the Greeks by showing that that commandment really calls for the highest individual aspiration, and that its upshot is the validation of man's creative faculties—his highest individual functioning?

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JOURNALS AND NEW BOOKS

THE INTERNATIONAL JOURNAL OF ETHICS. January, 1911. *William James as Philosopher* (pp. 125-153): A. O. LOVEJOY.—The more specific significance of James consists in this, that he brought to the vocation of the philosopher an almost unequaled power of seeing these two generic aspects of reality: the uniqueness and inwardly self-authenticating character of concrete existences, and the uniqueness and the primacy of the temporal quality of experience. *The Place of Leisure in Life* (pp. 153-165): B. BOSANQUET.—A popular account of the unity or plot of Aristotle's "Ethics." Leisure is the satisfaction of a disinterested interest and is, for Aristotle, the goal of education. *Charity Organization* (pp. 165-178): THOMAS JONES.—A reply to Bosanquet's criticism in the *Journal* of July, 1910, and a statement of the theory of pauperism. *Goethe's Influence on Carlyle* (pp. 178-189): F. MELIAN STAWELL.—The first of two papers in which is noted the emphasis in Goethe upon the kinship and sympathy between man and nature and the necessity of renunciation for the higher life. *Idealism and the Conception of Forgiveness* (pp. 189-198): J. W. SCOTT.—Badness is defective synthesis, and this is not an essential element in human nature. Hence, as capable of elimination, and when eliminated, it may be forgiven. *Confessions of an Indeterminist* (pp. 199-215): W. F. COOLEY.—Free will is a multiform, but essential, susceptibility to values, a susceptibility not rigidly fixed but subject to change apart from circumstances. In this sense it is essential to individuality. *Reviews*: F. W. Bussill, *Marcus Aurelius and the Later Stoics*: T. WHITTAKER. Walter L. Sheldon, *The Story of the Bible from the Standpoint of Modern Scholarship*: N. SCHMIDT. R. L. Otley, *Christian Ideas and Ideals*: DAVID PHILLIPS. John W. Buckham, *Personality and the Christian Ideal*: G. R. DODSON. Marion Le Roy Burton,

The Problem of Evil: THOMAS C. HALL. Stuart H. Rowe, *Habit Formation and the Science of Teaching*: GUY WHIPPLE. Edouard Roehrich, *Philosophie de l'éducation*: W. J. ROBERTS. M. W. Keatinge, *Studies in the Teaching of History*: M. L. EASTWOOD. Charles Werner, *Aristote et l'idéalisme platonicien*: S. WATERLOW. Sittánáth Tattvabhúshan. *The Philosophy of Bráhmaism*: J. S. MACKENZIE.

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band 22, Heft 1. October, 1910. *Die Zweiteilung in der Terminologie Heraclits* (pp. 1-21): E. LOEW. — Two series of terms are grouped in opposition to each other about λόγος as the false, and φρόνους as the true way of knowing. *Die Entwicklung der Geschichtsphilosophie W. von Humboldts* (pp. 22-60): L. EHTEN. — Humboldt at first taught that each individual man is the expression of a definite, unique idea, new and unclassifiable; whose perfection, however, depends wholly upon his moving towards the universal man-type; which movement can only be expressed esthetically. But later he looked on the idea as wholly dependent on the original activity of the individual. So that the historian's task is primarily to present how individual men realized their purposes, not to discover the goal of historical movement. *Nachlese zur ältesten Geschichte des Spinozismus* (pp. 61-98): DUNIN-BORKOWSKI. — Some Spinozistic "Munchhausen" and Märchen, with two innocent Dutchmen who were converted from a mistaken opposition to a no less mistaken approval of Spinoza's doctrine. *Die Monadenlehre in ihrer wissenschaftlichen Vervollkommnung* (pp. 99-127): E. RAFF. — Sixteen principles underly the monadology which established "ideological monism," the monads being the ultimate elements, and the substrate of thinking. Sixteen deductions are made from these, chiefly in regard to the subject-object relation. *Rezensionen*. A. R. v. Kleemann, *Die Stellung des Enthyphron im Corpus Platonicum*: C. FRIES. E. Caird, *Die Entwicklung der Theologie in der griechischen Philosophie*: C. FRIES. N. Hartman, *Plato's Logik des Seins*: C. FRIES. *Die neuesten Erscheinungen. Historische Abhandlungen*.

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NOTES AND NEWS

At the meeting of the Aristotelian Society on May 29, Miss E. E. Constance Jones read a paper on "A New Law of Thought." In every proposition of form *S is P*, S and P denote the one thing (SP)—the *is* therefore signifies identity of denotation; extensionally or denotationally *S is P*—and the attempt to interpret *S is P* in extension only would reduce us to *S is S*: difference of intension of the term is necessary for significant assertion. And we can not "identify" the extension or denotation of the one term with the intension of the other. And in intension *S is not P*. We can only say with Lotze that, taken in intension, *S is P* is impossible, and must be resolved into S is S, P is P, S is not P. *S is not P* asserts difference, or otherness of denotation in intensional diversity, *i. e.*, it denies what *S is P* affirms. It is not until S is P, S is not P, have been admitted and justified that we are entitled to formulate the law of contradiction and the law of excluded middle, and to say that

S is P } can not both be true (law of contradiction) (1).

S is not P } can not both be false (law of excluded middle) (2).

Taking (1) and (2), together with the analysis of *S is P* into an assertion of identity of denotation in diversity of intension, we can say that of any subject (S) P must be affirmed or denied, *i. e.*, that of any subject (S), P or not P (but not both) may be predicated. Thus we obtain as a law of significant assertion the following formula: Any subject of predication is an identity of denotation in diversity of intension. If *S is P* (SP) is analyzed as above, immediate and mediate inferences are at once justified. Mr. Russell's criticisms of this view may be answered by pointing out (among other things) (1) that his proof that, *e. g.*, *the author of "Waverley"* means nothing, seems to depend upon a double use of the word "meaning"; (2) that if in *The round-square is contradictory* the subject of the proposition has no denotation, this "proposition" (which Mr. Russell regards as a possible one) has no meaning of any sort—in fact, is not a proposition at all, and raises no difficulty whatever; for unless the roundness and squareness are referred to one thing (have one denotation), there is nothing self-contradictory in the subject; and moreover, if there were, it could not be asserted in the predicate, since *round and square* differ in intension from self-contradictory, and the whole thing is perfectly incoherent.—*The Athenæum*.

THE Huxley lecture at the University of Birmingham was delivered this year, on May 29, by Professor Henri Bergson. He chose "Life and Consciousness" as the subject of his lecture. He proposed the view that a world-wide antagonism exists between matter, which is essentially automatic and governed by necessity, and consciousness, which is characterized by the power of choice and creation. Consciousness, he believed, entered matter in order to entice it to organization; but in thus binding itself to matter, consciousness lost much of its original liberty, and was continually being dogged and cramped by automatism. Professor Bergson conceived consciousness as flowing through matter much as a stream of fluid flows through a tunnel; in digging galleries in this hard rock,

consciousness found itself impeded at point after point. Thus it had repeatedly to make fresh starts in its ceaseless efforts to create, until finally, in the course of this crooked path of evolution, it created man. In man alone, the chains which elsewhere bound consciousness to matter were broken. Here, maintained the lecturer, every contracted habit could be opposed by another habit, every kind of automatism by another automatism. Consciousness thus acquired its liberty by setting one necessity to fight another. In this way it has expanded to such a state of freedom that in man, perhaps, it may be able to endure beyond his earthly life.—*Nature*.

IN the School of Education of the University of Pittsburgh the following appointments have been made: Henry Davidson Sheldon, dean of the School of Education in the University of Oregon, has been made professor of the history of education. Dr. Sheldon will spend next year in Europe on leave of absence and will take up his work in Pittsburgh in the fall of 1912. Charles Barr Robertson, director of the schools of practise and professor of psychology and education in the Cortland, N. Y., State Normal School, has been called to the professorship of secondary education, and will organize and direct the practise teaching and the co-operative relations of the high schools and the university.

AT the Bryn Mawr College commencement announcement was made of a bequest of \$150,000 from Phoebe Anna Thorne, of New York, who died in 1909, to endow an associate professorship of education and the Phoebe Anna Thorne Model School to be conducted by the college as an experimental high school in connection with a graduate school of education.

THE June announcement of the Macmillan Company includes "Truth and Reality," by Professor John E. Boodin; "The Essentials of Psychology," by Professor W. B. Pillsbury, and "Animal Intelligence: Experimental Studies," by Professor Edward L. Thorndike.

"CRIME, Its Causes and Remedies," by Lombroso, forms the third volume of the Modern Criminal Science Series issued by Little, Brown & Co.

DR. ARTHUR MITCHELL, who for the past year has occupied the chair of philosophy at the University of Oregon, has been appointed assistant professor of philosophy at the University of Kansas.

A TRANSLATION of "Pragmatism" by Professor Wilhelm Jerusalem is announced by the publisher, Dr. Werner Klinkhardt, of Leipzig.

THE Fifth International Philosophical Congress will hold its meeting in the buildings of the University of London in the spring of 1915.

Professor G. P. Adams, assistant in philosophy at the University of California, will be absent on leave for the year 1911-12.

MR. G. E. MOORE has been appointed lecturer in moral science at Cambridge University, England, for five years.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

BRIEF STUDIES IN REALISM. I

NAÏVE REALISM VS. PRESENTATIVE REALISM¹

I

IN spite of the elucidations of contemporary realists, a number of idealists continue to adduce in behalf of idealism certain facts having an obvious physical nature and explanation. The visible convergence of the railway tracks, for example, is cited as evidence that what is seen is a mental "content." Yet this convergence follows from the physical properties of light and a lens, and is physically demonstrated in a camera. Is the photograph, then, to be conceived as a psychical somewhat? That the time of the visibility of a light does not coincide with the time at which a distant body emitted the light is employed to support the same sort of conclusion, in spite of the fact that the exact difference in time may be deduced from a physical property of light—its rate. The dislocation in space of the light seen and the astronomical star is used as evidence of the mental nature of the former, though the exact angular difference is a matter of simple computation from purely physical data. The doubling of images of, say, the finger when the eyeball is pressed is frequently treated as a clincher. Yet it is a simple matter to take any body that reflects light, and by a suitable arrangement of lenses produce not only two but many images, projected into space. If the fact that under definite *physical* conditions (misplacement of lenses), a finger yields two images proves the psychical character of the latter, then the fact that under certain conditions a sounding body

¹I am indebted to Dr. Bush's article on "Knowledge and Perception," this JOURNAL, Vol. VI., p. 393, and to Professor Woodbridge's article on "Perception and Epistemology" in the "James Memorial Volume," as well as to his paper on "Sensations," read at the 1910 meeting of the American Philosophical Association. Since my point of departure and aim are somewhat different, I make this general acknowledgment in lieu of more specific references.

yields one or more echoes is, by parity of reasoning, proof that the echo is made of mental stuff.²

If, once more, the difference in form and color of a table to different observers, occupying different physical positions, is proof that what each sees is a psychical, private, isolated somewhat, then the fact that one and the same physical body has different effects upon, or relations with, different physical media is proof of the mental nature of these effects. Take a lump of wax, and subject it to the same heat, located at different positions; now the wax is solid, now liquid—it might even be gaseous. How “psychical” these phenomena! It almost seems as if the transformation of the physical into the mental in the cases cited exemplified an interesting psychological phenomenon. In each case the beginning is with a real and physical existence. Taking “the real object,” the astronomical star, on the basis of its physical reality, the idealist concludes to a psychical object, radically different! Taking the *single* object, the finger, from the premise of its real singleness he concludes to a double mental content, which then takes the place of the original single thing! Taking one-and-the-same-object, the table, presenting *its* different surfaces and reflections of light to different real organisms, he eliminates the one-table-in-its-different-relations in behalf of a multiplicity of totally separate psychical tables! The logic reminds us of the story of the countryman who, after gazing at the giraffe, remarked, “There ain’t no such animal.” It almost seems, I repeat, as if this self-contradiction in the argument created in some minds the impression that the object—not the argument—was undergoing the extraordinary reversal of form.

However this may be, the problem indicated in the above cases is simply the good old problem of the many in one, or, less cryptically, the problem of the maintenance of a continuity of process throughout differences. I do not pretend that this situation, though the most familiar thing in life, is wholly without difficulties. But its difficulty is not one of epistemology, that is, of the relation of known to a knower; to take it as such, and then to use it as proof of the psychical nature of a final term, is also to prove that the trail the rocket stick leaves behind is psychical, or that the flower which comes in a continuity of process from a seed is mental.

²Plato’s use of shadows, of reflections in the water, and other “images” or “imitations” to prove the presence in nature of non-being was, considering the state of physical science in his day, a much more sensible conclusion than the modern use of certain images as proof that the object in perception is a psychical content.

II

Contemporary realists have so frequently and clearly expounded the physical explanation of such cases as have been cited that one is at a loss as to why idealists go on repeating the cases without even alluding to the realistic explanation. One is moved to wonder whether this neglect is just one of those circumstances which persistently dog philosophical discussions, or whether something in the realistic position gives ground (from at least an *ad hominem* point of view) for the neglect. There is a reason for adopting the latter alternative. Many realists, in offering the type of explanation adduced above, have treated the cases of seen light, doubled imagery, as perception in a way that ascribes to perception an inherent cognitive status. They have treated the perceptions as *cases of knowledge*, instead of as simply natural events having, in themselves (apart from a *use* that may be made of them), no more knowledge status or worth than, say, a shower or a fever. What I intend to show is that if "perceptions" are regarded as cases of knowledge, the gate is opened to the idealistic interpretation. The physical explanation holds of them as long as they are regarded simply as natural events—a doctrine I shall call naïve realism; it does not hold of them considered as cases of knowledge—the view I call presentative realism.

The idealists attribute to the realists the doctrine that "the perceived object is the real object." Please note the wording; it assumes that there is *the* real object, something which stands in a contrasting relation with objects not real or else less real. Since it is easily demonstrable that there is a numerical duplicity between the astronomical star and the visible light, between the single finger and the doubled images, when the former is dubbed "*the*" real object the latter evidently stands in disparaging contrast to its reality. If it is a case of knowledge, the knowledge refers to the star; and yet not the star, but something more or less unreal (that is, if the star be "*the*" real object), is known.

Consider how simply the matter stands in what I have called naïve realism. The astronomical star is *a* real object, but not "*the*" real object; the visible light is another real object, found, when knowledge supervenes, to be an occurrence standing in a process continuous with the star. Since the seen light is an event within a continuous process, there is no point of view from which its "reality" contrasts with that of the star.

But suppose that the realist accepts the traditionary psychology according to which every event in the way of a perception is also a case of knowing something. Is the way out now so simple? In the case of the doubled fingers or the seen light, the thing known in

perception contrasts with the physical source and cause of the knowledge. There is a numerical duplicity. Moreover the thing known in perception is in relation to a knower, while the physical cause is not as such in relation to a knower. Is not the most plausible account of the difference between the physical cause of the perceptive knowledge and what the latter presents precisely this latter difference—namely, presentation to a knower? If perception is a case of knowing, it must be a case of knowing the star; but since the “real” star is not known in the perception, the knowledge relation must somehow have changed the “object” into a “content.” Thus when the realist conceives the perceptual occurrence as a case of knowledge or of presentation to a mind or knower, he lets the nose of the idealist camel into the tent. He has then no great cause for surprise when the camel comes in—and devours the tent.

Perhaps it will seem as if in this last paragraph I had gone back on what I said earlier regarding the physical explanation of the difference between the visible light and the astronomical star. On the contrary, my point is that this explanation, though wholly adequate as long as we conceive the perception to be itself simply a natural event, is not at all available when we conceive it to be a case of knowledge. In the former case, we are dealing with a relation between natural events. In the latter case, we are dealing with the difference between an object as a cause of knowledge and an object as known, and hence in relation to mind. By the “method of difference” the sole explanation of the difference between the two objects is the absence or presence of relation to mind.

In the case of the seen light,³ reference to the velocity of light is quite adequate to account for its occurrence in its time and space difference from the star. But viewed as a case of what is known (on the supposition that perception is a case of knowledge), reference to it only increases the contrast between the real object and the object known in perception. For, being just as much a part of the object that causes the perception as is the star itself, it (the velocity of light) *ought* to be part of what is known in the percep-

³It is impossible, in this brief paper, to forestall every misapprehension and objection. Yet to many the use of the term “seen” will appear to be an admission that a case of knowledge is involved. But is smelling a case of knowledge? Or (if the superstition persists as to smell) is gnawing or poking a case of knowledge? My point, of course, is that “seen” involves a relation to organic activity, not to a knower, or mind. Furthermore, the seen light is not in relation to an organism. We may speak, if we will or if we must, of the relation of vibrations of the ether to the eye-function; but we can not speak, without making nonsense, of the relation of the perceptual light to an eye, or an eye-activity. For the joint efficiencies of the eye-activity and of the vibrations condition the seen light.

tion, while it is not. Since the velocity of light is a constituent element in the star, it should be known in the perception; since it is not so known, reference to it only increases the discrepancy between the object of the perception—the seen light—and the real, astronomical star. The same is true of any physical conditions that might be referred to: *The very things that, from the standpoint of perception as a natural event, are conditions that account for its happening are, from the standpoint of perception as a case of knowledge, part of the object that ought to be known but is not.*

In this fact we have, perhaps, the ground of the idealist's disregard of the oft-proffered physical explanation of the difference between the perceptual event and *the* (so-called) real object. And it is quite possible that some realists who read these lines will feel that in my last paragraphs I have been making a covert argument for idealism. Not so, I repeat; they are an argument for a truly naïve realism. The presentative realist, in his appeal to "common sense" and the "plain man," first sophisticates the umpire and then appeals. He stops a good way short of a genuine naïveté. The plain man, for a surety, does not regard noises heard, lights seen, etc., as mental existences; but neither does he regard them as things *known*. That they are just things is good enough for him. That they are in relation to mind, or in relation to mind as their "knower," no more occurs to him than that they are mental. By this I mean much more than that the formulæ of epistemology are foreign to him; I mean that his attitude to these things *as* things involves their *not* being in relation to mind or a knower. Once depart from this thorough naïveté, and substitute for it the psychological theory that perception is a cognitive presentation of an object to a mind, and the first step is taken on the road which ends in an idealistic system.

III

For simplicity's sake, I have written as if my main problem were to show how, in the face of a supposed difficulty, a strictly realistic theory of the perceptual event may be maintained. But my interest is primarily in the facts, and in the theory only because of the facts it formulates. The significance of the facts of the case may, perhaps, be indicated by a consideration which has thus far been ignored. In regarding a perception as a case of knowledge, the presentative realist does more than shove into it a relation to mind which then, naturally and inevitably, becomes the explanation of any differences that exist between its subject-matter and the constitution of some real object with which it contrasts. In many cases—very important cases, too, in the physical sciences—the contrasting "real object" does not become "known" by perception or presentation. It is

known by a logical process, by inference—as the case of the contemporary position of the star is determined by calculations from data, not by perception. This, then, is the situation of the presentative realist: If perception is a case or mode of knowledge, it stands in unfavorable contrast with another indirect and logical mode of knowledge; *its* object is less valid than that determined by inference. So the contrast of *the* (so-called) real object with the fact “presented” in perception turns out to be the contrast of an object known through a logical way with one directly “apprehended.” I do not adduce these considerations as showing that the case is hopeless for the presentative realist;⁴ I am willing to concede he can find a satisfactory way out. But the difficulty exists; and in existing it calls emphatic attention to a case which is certainly and indisputably a case of knowledge—namely, propositions arrived at through inference—judgments as logical assertions.

With relation to this unquestionable case of knowledge, the logical or inferential, perceptions occupy a unique status, one which readily accounts for their being regarded as cases of knowledge, although in themselves they are merely natural events. (1) They are the sole ultimate data, the sole media, of inference to all natural objects and processes. While we do not, in any intelligible or verifiable sense, know *them*, we know all things that we do know *with* or *by* them. They furnish the only ultimate evidence of the existence and nature of the objects which we infer, and they are the sole ultimate checks and tests of the inferences. The visible light is the evidence on the basis of which we infer the existence, place, and structure of the astronomical star, and some other perception is the verifying check on the value of the inference. Because of this characteristic use of perceptions, the perceptions themselves acquire, by “second intention,” a knowledge status. They *become* objects of minute, accurate, and experimental scrutiny. Since the body of propositions that forms natural science hangs upon them, *for scientific purposes* their nature *as* evidence, *as* signs, entirely overshadows their natural status, that of being simply natural events. The scientific man, as scientific, cares for perceptions not in themselves, but as they throw light upon the nature of some object reached by evidence. And

⁴ This is the phase of the matter, of course, which the rationalistic or objective realist, the realist of the type of T. H. Green, emphasizes. Put in terms of systems, the difficulty adduced above is that in escaping the subjectivism latent in treating perception as a case of knowledge, the realist runs into the waiting arms of the objective idealist. And as a matter of fact, it is extremely difficult to find any differences—save verbal and psychological ones—between contemporary propositional realists—as G. E. Moore and Bertrand Russell—and the classic type of objective idealists. Propositional realism I shall deal with in a later paper.

since every such inference tries to terminate in a further perception (as its test of validity), the *value* of knowing depends on perception. (2) Independent of science, daily life uses perceptions as signs of other perceptions. When a perception of a certain kind frequently recurs and is constantly used as evidence of some other impending perceptual event, the function of habit (a natural function, be it noted, not a psychical or epistemological function) often brings it about that the perception loses its original quality in acquiring a sign-value. Language is, of course, the typical case. Noises, in themselves mere natural events, through habitual use as signs of other natural events become integrated with what they mean. What they stand for is telescoped, as it were, into what they are. This happens also with other natural events, colors, tastes, etc. Thus, *for practical purposes*, many perceptual events are cases of knowledge; that is, they have been *used* as such so often that the habit of so using them is established or automatic.

In this brief reference to facts that are perfectly familiar, I have tried to suggest three points of crucial importance for a naïve realism: first, that the inferential or evidential function (that involving logical relation) is in the field as an obvious and undisputed case of knowledge; second, that this function, although embodying the logical relation, is itself a natural and specifically detectable process among natural things—it is not a non-natural or epistemological relation, that is, a relation to a mind or knower not in the natural series; third, that the *use*, practical and scientific, of perceptual events in the evidential or inferential function is such as to make them *become* cases of knowledge, and to such a degree that this acquired characteristic quite overshadows, in many cases, their primary nature.

If we add to what has been said the fact that, like every natural function, the inferential function turns out better in some cases and worse in others, we get a naturalistic or naïvely realistic conception of the “*problem of knowledge*”: Control of the conditions of inference—the only type of knowledge detectable in direct existence—so as to guide it toward the better.

IV

I do not flatter myself that I will receive much gratitude from realists for attempting to rescue them from that error of fact which exposes their doctrine to an idealistic interpretation. The superstition, growing up in a false physics and physiology and perpetuated by psychology, that sensations-perceptions are cases of knowledge, is too ingrained. But—*crede experto*—let them try the experiment of conceiving perceptions as pure natural events, not as cases of aware-

ness and apprehension, and they will be surprised to see how little they miss—save the burden of confusing traditionary problems. Meantime, while philosophic argument such as this will do little to change the state of belief regarding perceptions, the development of biology and the refinement of physiology will, in due season, do the work.

On concluding my article, I ought to refer, in order to guard against misapprehension, to a reply that the presentative realist might make to my objection. He might say that while the seen light is a case of knowledge or presentative awareness, it is not a case of knowledge of the star, but simply of the seen light, just as it is. In this case the appeal to the physical explanations of the difference of the seen light from its objective source is quite legitimate. At first sight, such a position seems innocent and tenable. Even if innocent, it would, however, be ungrounded, since there is no evidence of the existence of a knower, and of its relation to the seen light. But further consideration will reveal that there is a most fundamental objection. If the notion of perception as a case of adequate knowledge of its own object-matter be accepted, the knowledge relation is absolutely ubiquitous; it is an all-inclusive net. The "ego-centric predicament" is inevitable. This result of making perception a case of knowing will occupy us in the second paper of this series.

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DISCUSSION

PETER'S TOOTHACHE ONCE MORE

THE non-pragmatist who, in spite of his unregenerate condition, still has an open mind and a real sympathy for the pragmatic spirit, will find much that is helpful in Professor Moore's recent and brilliantly written book, "Pragmatism and Its Critics." There are, however, a few questions—and among these some which he has been accustomed to consider rather crucial—concerning which he will come away from his reading with no great increase of comprehension. One of these questions, which Professor Moore evidently considers already so completely thrashed out as to need no further treatment from him, is the pragmatic meaning of "truth." In two or three passages he incidentally reaffirms the old formulas, but nowhere does he make any considerable effort to throw new light on the subject or to explain any of the difficulties connected with that much-debated term. This is unfortunate for a few of us who, in spite of sincere

study upon many pages of pragmatic writing, still have to admit that there is at least one difficulty outstanding, the explanation of which has never been made completely clear. The difficulty, in short, is this: If it be meaningless to define a true judgment as "one which represents its object as it really is," and if truth, therefore, is not to be conceived as correspondence, but identified, rather, with the process of verification, lying wholly within experience, what shall we do with the case of a judgment which is never verified but yet corresponds with its object—a judgment, that is, whose object is as the judgment thinks it? But perhaps, to make my meaning clear, I had best revert to an illustration which I used some time ago in this JOURNAL.¹

The illustration was briefly this: Peter has a toothache, and John thinks Peter has a toothache. Now according to pragmatism, as I understand it, the truth of John's judgment does not consist in the correspondence between it and its object, but in the "experienced process" of its verification. So far all is clear. But now arise two possible difficulties. In the first place, let us suppose that John verifies his judgment only after Peter has cured his toothache. The state of things is then at least a little queer. For, according to the pragmatic view, John's judgment, "Peter has a toothache," was not true so long as Peter had the toothache, and became true only when Peter ceased to have the toothache. A more serious difficulty is the following: A third boy, Tom, thinks Peter has *not* a toothache. He tries to find out, but misinterprets Peter's words and actions, and finally concludes that he was quite right and thereafter lets the matter drop. His process of verification was perfectly satisfactory to him. His idea "worked" "in the way it set out to work." Was it therefore true? If not, why not? And if it was true, then were not two contradictory opposites both true at the same time and in the same sense?

In an article which appeared in this JOURNAL a year ago last July, Professor Moore promised to take up this toothache case "in another paper." I have been waiting for this "other paper" ever since. And to my disappointment, neither in Professor Moore's recent article in this JOURNAL on "How Ideas Work," nor anywhere in his new book, do I find any slightest attempt to help me out of my difficulties. Instead of keeping his promise, he proposes a perfectly new toothache case, about a man who had an ache and thought it was in his tooth and so went to the dentist and had it out. Here, of course, the pragmatist has no difficulty in demonstrating triumphantly that the idea, "The tooth is the cause of the pain," led the

¹ Vol. IV., pp. 322-24. It also appears in "What is Pragmatism?" pp. 70, 117-121.

man to the dentist's, and so was verified. Of course this is all true, but it so completely avoids all the difficulties of my toothache case that I am quite as much in the dark as ever.

As Professor Moore refuses to help me in this matter, I have searched for what help I could get from the other pragmatists. Professor James has this much to say that is relevant to Peter's toothache: "The critic's trouble seems to come from his taking the word 'true' irrelatively, whereas the pragmatist always means 'true for him who experiences the workings.' 'But is the object *really* true or not?' the critic then seems to ask—as if the pragmatist were bound to throw in a whole ontology on top of his epistemology and tell us what realities indubitably exist. 'One world at a time,' would seem to be the right reply here."²

In similar fashion Dr. Schiller writes: "The argument about 'correspondence,' 'Peter,' etc., seems to me to beg the question, because you *assume* that one can know what the reality, or the real truth, is apart from our human modes of getting at it. But this is just the crux. Our systematic challenge is—What right have you to take for granted the reality of what you have no means of knowing? It is so far just the Kantian question, How know? applied consistently. The only inference you are entitled to draw from your example is that Peter *may* have a toothache but there is a dispute about it."³

If these criticisms are to be taken as in any sense answers to my difficulty and as explanations of the toothache case, it must be simply because they deny my right to suppose at the same time a Tom with his idea and a Peter with his ache. "How do you *know* that Peter had a toothache?" ask Dr. Schiller and Professor James. And the answer, of course, is: I don't; I only *suppose* he has. That was my *hypothetical case*. Now if you grant that I have a right to my illustration and that it is a possible case, then you are bound to tell me how Tom's verified idea that Peter had no toothache was true when as a fact Peter did have a toothache. And if my case is impossible, and it is altogether uncertain whether there be anything outside of Tom's own experience to which it is bound to conform in order to be true, then are we not heading straight for solipsism? If there are other sentient beings beside myself concerning whose experiences I may form judgments, then the relation of those experiences to my judgments about them, although itself not experienced by any of us human beings, is certainly an important element in the problem whether my judgments are true. And if there be no such

² "The Meaning of Truth," p. 177.

³ From a personal letter which Dr. Schiller permits me to quote. For a somewhat similar criticism see H. V. Knox in *Mind*, Vol. XVIII., p. 599.

relation it must be because there is *no other term* to which my judgment is related.

Now, lest I should be misunderstood by my pragmatist friends, let me hasten to explain that I have never for a moment believed that they were really solipsists, nor do I suppose that they seriously question my existence or each others'. I wish merely to point out that if one persists in holding to principles which are consistent only with solipsistic presuppositions, one can not get fully free from solipsism even by proclaiming upon the housetops one's enthusiastic adherence to the "social consciousness" view. It is all very well to insist that consciousness is social and public, and that self-consciousness arises only *pari passu* with consciousness of other selves. As Professor Moore points out, "My consciousness is a function of a social process in which my body or brain or mind is only one factor." This is all perfectly true. And yet, however interdependent our experiences may be, there is a sense in which my thought is private—*my* thought and not yours. As Professor James puts it, the breaches between "thoughts belonging to different personal minds . . . are the most absolute breaches in nature."⁴ And if I deny the existence of an unexperienced relation between my thought and your experience and the relevancy of this relation to the truth of my thought, I certainly seem so far forth to be denying your experience.

In all which I may be completely mistaken. And if I am, will not some kind pragmatist friend take pity on me, and explain to me at last the real nature of truth as applied to Peter's toothache?

JAMES BISSETT PRATT.

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REPLY TO PROFESSOR PRATT

SINCE Professor Pratt has failed to discover in my book, to which he courteously refers, anything relevant to his difficulties with Peter's toothache, I have little hope that he will find "help" in what I say here. This failure is symptomatic of the entire situation between Professor Pratt and the pragmatists. It means that Professor Pratt sees no connection between the origin, intent, and nature of ideas or judgment and the problem of truth. For the pragmatist the problem of the truth of ideas is bound up with that of their origin, nature, and intent. The result is that throughout the discussion the terms "idea," "judgment," "thinking," etc., mean one thing for the pragmatist and quite another for Professor Pratt. Hence each party seems to the other to be constantly begging the question. And it is futile to go on discussing the truth of ideas as if it were a per-

⁴ "Psychology," p. 153.

factly distinct and separate problem until we are agreed upon what an idea is. And if we were so agreed there would be little room left for disagreement about truth and error.

By "idea" and "judgment" Professor Pratt apparently means a "mental state" or "image" which through a relation "*not experienced by any of us human beings*" corresponds (or fails to correspond) to an object. (Italics mine.) For the pragmatist an idea or judgment is a form of interaction between beings that are *already* in some *other* (non-ideational, *e. g.*, instinctive, or perceptual) form of interaction which has fallen into conflict and uncertainty. To relieve this uncertainty the interaction assumes the reflective, judging form. For the pragmatist the entire origin, nature, intent, and verification of the judgment is defined with reference to this uncertainty in the already existing interactions. It is obvious that this kind of judgment does not require a relation "unexperienced by any of us mortals" to hitch it to its object. It emerges out of the *preceding* interaction already hitched to it. It is because John and Peter are already in some sort of interaction that John is capable of making any judgment whatever about Peter. If the relation between John's idea and Peter's pain is one outside the experience "of any of us human beings," how "on earth"—whatever it might do in this extra-human world—can John's idea aim at Peter at all?

So far as I can see, on Professor Pratt's view, if any one—sane or insane—should happen to have a mental image expressing itself in the words, "Peter Doe's eyes are green," and if, entirely apart from the origin and intent of this image, there happened to be somewhere, anywhere, in the universe, even beyond the experience "of any of us humans," a being with green eyes called by his co-beings "Peter Doe," we should have a judgment, according to Professor Pratt, and the judgment would be true. Now of course, as Professor H. W. Stuart has observed, there is nothing to prevent any one from cherishing this view of the judgment, if some sort of esthetic satisfaction is to be got from it; but what logical use is to be made of it is difficult to discover.

Proceeding with this notion of the judgment, Professor Pratt says that pragmatists have never met his difficulty of "a true but unverified judgment." And he might well have added, "And they can not meet it." They can not, that is, on its own terms. It is one of those surds which intellectualistic realism has in common with intellectualistic idealism and which the pragmatic movement "meets" by abolishing. It does this by finding that the judgment is an act *which includes verification in its intent*. Hence to submit the problem of "a true but unverified judgment" is, as Schiller says, to beg the whole issue. For the pragmatist no such case exists.

So, too, when Professor Pratt says that James and Schiller would deny him "the right to suppose, at the same time, a Tom with his idea and a Peter with his ache," he again overlooks the immense difference between his and James's and Schiller's conception of Tom's idea. What James and Schiller would deny is, not Tom with his idea, but Tom with *Professor Pratt's kind of idea*—*e. g.*, an idea consisting of an image whose relation to its object is "not experienced by any of us human beings," to say nothing of Tom.

Passing to the case of Peter, John, and Tom, Professor Pratt finds that in discussing, in my book, Peter's idea of his own ache, I have substituted "a perfectly new case" which "completely avoids all the difficulties" of the Peter-John and the Peter-John-Tom cases. Here I can only insist upon the identity in logical type, to which I called attention in a footnote, between Peter's judgment of his own ache and John's and Tom's judgments of it. Surely Peter is quite as likely to misdiagnose his own ache as is John or Tom—perhaps more so if John and Tom happen to be good physicians. Peter may think that a certain tooth is the cause of the ache, when it is not, just as John or Tom may think Peter has the toothache when he hasn't. Peter's difficulty and liability to error in judging his own ache are, in principle, just the same as John's and Tom's, and have to be met in the same way. Peter's ache and tooth are just as much (and as little) "realistically" related to his own ideas as to John's and Tom's.

If what I have just said about the identity in type of Peter's judgment about his own ache and John's and Tom's judgments about it holds, it ought to be sufficient to point Professor Pratt, in his difficulty with the latter, to the method which he admits works "so triumphantly" in the former. He would then find that there is no more difficulty with the opposed judgments of John and Tom, *provided they are taken pragmatically*, than with the different and opposed hypotheses which any one makes in his own mind in the course of an investigation. John's and Tom's judgments are but parts of a process of *interaction*, just as are the competing hypotheses in the thinking of any single investigator.

If Professor Pratt says: "But the judgments of John and Tom are not mere hypotheses; they are 'verified' judgments and John and Tom are 'satisfied' with them," the reply is: (1) these judgments are not "verified"—they are not even judgments unless they are expressions of uncertainty in interaction between John and Tom; (2) if they are such expressions and if the contradiction is *known* to John and Tom, obviously the verification and satisfaction can not be complete; (3) if the investigation of each is independent of and unknown to the other, even so, if John and Tom are good pragmatists, their "verification" and "satisfaction" will still be a "working"

verification and satisfaction, and as such will always be open to reconstruction. In other words, the difference between hypothesis and verification is again a relative—a “working” one. Hypothesis and verification are not absolute and exclusive qualities, but developmental stages of the judgment. The hypothetical judgment expresses the ambiguous and conflicting, the verified judgment the unified and definite *response*, to Peter’s actions. Verification marks the passage from the thinking, judging form of *response* to the stage of preparedness to act. If the response from the beginning is perfectly definite and unquestioned, then it is not, for the pragmatist, a judgment. It is simply some form of a direct, unreflective reaction.

Doubtless Professor Pratt will say, “Admitting the element of intent and response in the judgment, is not the intent of this response an intent to correspond to the object ‘as it really is?’” But just what does this mean? (1) The “correspondence” must stop short of identity with the object. It can not even pretend to “copy” it. This being the case, what *kind* of verification can it possibly have other than finding that when Peter is treated as having a toothache he responds (co-responds) in a certain way? Is not this all the correspondence and verification the idea expects or wants? And speaking of solipsism, would not a demand for the other sort of correspondence and verification mean a desire to *be* Peter’s toothache, and end in a complete absorption of Peter and finally of everything else into the idea? Does not a purely *intellectualistic* realism inevitably end in the same solipsism, and by the same token, in the same absolutism, as intellectualistic idealism? (2) “The object as it really is”—what is this? Is it the pain as it is for Peter, or as it is for John, or as it is in the interaction between Peter and John? The pragmatist’s answer is that the latter is what the object “really is” *in the judgment*. What it is for Peter alone may be just as “real”—only it is not *that* reality that is undergoing judgment.

Doubtless Professor Pratt will find that all this “shifts the ground.” And so it does. I see no way of meeting Professor Pratt’s difficulties “on their own ground.” And I wonder if Professor Pratt does. How does *he* settle the contradiction between John and Tom? For the experimental theory, these opposing judgments, *so long as they are opposed*, are still working hypotheses, and as such are subject to further experimentation. What are they for Professor Pratt? How does Professor Pratt decide between John and Tom? For let us remember that he can not here appeal to “what works.” That already stands condemned by his entire article. What then? The only passage in the above of Professor Pratt’s which bears on this is interesting. In answer to the ques-

tion, "How do you know that Peter has a toothache?" Professor Pratt says: "The answer is, I don't. I only suppose he has," and then he says, "You are bound to tell me how Tom's verified idea that Peter had no toothache was true, when *as a fact* [italics mine] Peter did have a toothache." Apparently Professor Pratt regards it as impossible to "know" whether Peter has the toothache, but easy to tell when "it is a fact."

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REVIEWS AND ABSTRACTS OF LITERATURE

The Direction of Desire: Suggestions for the Application of Psychology to Everyday Life. STANLEY M. BLIGH. London: Henry Frowde. 1910. Pp. xii + 360.

This book on "The Direction of Desire" addresses itself to those who have already an interest in such a discussion. Its nature and intention are frankly declared in the preface. "This book makes no claim to be scientific in the strict sense of the word. It aims chiefly at suggesting new lines of inquiry with regard to the alteration of the tone of consciousness, where that is desired. It is hoped that it may be found useful by those who have no time or inclination for reading longer and more serious works on psychology, but who at the same time have an interest, either for their own sake or for that of others, in investigating the possibilities of the human personality. . . . The object aimed at throughout has been to call attention to the possible uses of what has been named 'directive' psychology." (Preface, pp. iii and iv.)

Mr. Bligh feels himself to be a pioneer in the field of "directive" psychology, and in this character asks indulgence and cooperation of the readers of the book. "The facts upon which theories or principles in regard to the matters here discussed could be established with any high degree of probability have," he thinks, "yet to be collected. Perhaps a hope may be entertained that this book may lead to their being more accurately ascertained. . . . The personal experiences of those who may feel any interest in attaining self-direction, and in recording their efforts in regard to it, would, if obtainable, form the basis for a more complete and useful study of various problems which have been so roughly outlined in these pages." (Preface, p. iv.)

Of the difficulties which beset the path of a pioneer in such an undertaking Mr. Bligh is fully conscious. Directive psychology will, he recognizes, have to meet "all sorts of criticisms and objections. Perhaps the chief of these objections is the prejudice against self-experimentation in moral matters. The sacredness of the emotional life is held as a kind of dogma by many people with an intensity which is only equaled by its vagueness. . . . Our emotional nature is half consciously regarded as sent

us by Providence for its own purposes; it is thought that we must not tamper with it lest we weaken it, that we must not even inspect its workings too closely lest we get morbidly introspective and our blood turn to water" (p. 3). "Now," he continues, "directive psychology goes dead in the face of these old prejudices. It would set before itself for solution two main questions, how self-consciousness can be made a blessing to its possessors, and how people can be enabled . . . to follow their own reasoned and sincere choice in matters of thought and conduct, with as little hindrance as possible from their lower passions and tendencies; no observations, no experiments," he adds, "which tended to help in the attainment of these ends would be considered either impious or dangerous, or derogatory to human dignity" (p. 4).

Directive psychology is, then, concerned with the production by the means of suggested recommendations of a change in the personality; it is "applied psychology" (p. 3). Mr. Bligh thus describes its peculiar interest: "Following the lines of applied sociology, it would seek to produce in the human personality artificial phenomena consciously and intentionally directed. The personality would be studied not so much to understand the mechanism by which the sensations are aroused, or the ways in which they are combined and worked up (all that being in the province of pure psychology), but to discover the causes of the inefficiencies and of the discontents, and to provide practical remedies for them" (p. 3).

It has seemed worth while to set forth chiefly in Mr. Bligh's own words the scope and interest of the discussion in order to exhibit its particular appeal, and to present the point of view and the purpose of the book uncolored by interpretation and unimpaired by criticism. The further discussion of the contents and method of the book will necessarily involve some consideration of the feasibility of the attempt here made and examination of the ground on which the plan rests. To this more critical view we are invited by inadequacies disclosed on a closer study of the subject-matter, and by doubts and difficulties evoked by the method of treatment. These inadequacies and difficulties it is somewhat hard to state plainly without seeming to refuse appreciation to this study of the possible uses of a directive psychology, which is, in truth, stimulating and of wide interest. I wish, then, to preface this further comment by remarking, in addition to the intrinsic interest of the subject-matter, the range of Mr. Bligh's observations, the keenness of his analysis of certain types of individuals and of his comment on certain social conditions, and the moderation and frequent trenchancy of his expression. Mr. Bligh has in this discussion evinced desire and ability to demonstrate with emphasis some truths and facts generally held to be "obvious" and disregarded on that account, which have consequences significant for the individual and for society. It is in these valuations, these criticisms and suggestive comments, and in the sense and weight of independent thought and observation, that the strength and interest of the book chiefly lie. The facts and conditions which are here presented command the reflective attention of every one who in any educative capacity is concerned with human

welfare. Mr. Bligh's repeated emphasis on the dependence of the attitude towards the development of the personality upon the philosophic outlook on the universe, his contention that there "should be a definite education of the power of synthesizing the aims" of the individual, his suggestion of a "more definite instruction in the use of leisure," his plea for the recognition of the social utility of "the more unusual forms of capacity for certain work requiring originality of thought," his insight into what he has termed "the social pressures" brought to bear upon the individual—all merit the thoughtful consideration of persons interested in the liberation and development of the potentialities of the individual.

Mr. Bligh's contention has the strength due to origin in beliefs and assumptions which are familiar and currently accepted. Moreover, he disarms prejudice as he proceeds by a frank and unreserved recognition of the difficulties and complexities of the undertaking. Yet the danger-point of the venture is, apparently, hidden from his sight. It may be located in the fundamental conception of the nature and operation of "directive" psychology, in the conviction of the need for systematic and special applications to "practical" conditions of the principles of "pure" psychology. Given this belief, it is clear that with the attempt to set forth the facts and conditions which render these recommendations important, would go the attendant necessity of setting forth also in some degree the "pure" psychological principles in order to give to the recommendations authority and carrying power. So that Mr. Bligh, by reason of the exigencies of his theory, has here on his hands the double necessity of describing ways and means, and of giving a brief, condensed exposition of principles which will justify and explain the methods suggested. These explanatory accounts seem, however, sometimes dubitable in the light of the results of recent experimental and analytical psychology. The difficulty might be attributed to the restriction arising from the plan and method of the discussion, were it not for the fact that some of Mr. Bligh's educational doctrines might, I think, with reason be questioned from a psychological point of view.

With his eye on the problem of devising and expounding methods designed to meet certain limitations in the personality, Mr. Bligh considers various types of persons, classified according to their temperament and attitudes towards various fundamental subjects, and discusses the benefits possible to these persons by the help of directive psychology. Classification of people, which is necessarily not exhaustive in our present complex and varied society, when made the sole basis of a consideration of methods of psychological direction and betterment, is inevitably unstable and must seem unfruitful and unauthoritative. However, Mr. Bligh has faith in his diagnosis, and prescriptions are given for the types of persons which he discriminates.

Further: the "immense variety of personality," which Mr. Bligh himself notes, necessitates a more or less hurried and topical treatment of a large range of subjects. Often all that may be done within the limitations of a chapter which has to consider many facts and conditions, is to

call our attention by a brief statement to a conception which *would* repay further development and reflection.

Perhaps the foregoing analysis of the method of procedure in suggesting the applications of the principles of psychology to everyday life has shown cause why the book, despite the value and suggestiveness of many of its discussions, is hard to read consecutively. Contrary to expectation and to interest in the themes, one lays it down after about fifty pages, surfeited with recommendations. Yet certain of the observations and many of the points noted are of sufficient vitality and pertinency to recur to one often in the course of subsequent reflections and experiences.

It is, perhaps, quite consistent with the point of view which conceives of principles of action as principles of "pure" psychology, having in themselves no practical character or bearing, but needing to be specially applied to typical cases and conditions, to hold that ethical considerations, opinions of right and wrong, constitute again a special province and are *per se* not involved in a consideration of modes of action desirable for the individual, so that the recommendations of directive psychology can, therefore, not be ethically determining (p. 7). Directive psychology has, however, as Mr. Bligh is at pains to point out (p. 76), a "kind of relationship" with "certain ethical systems," which is "based on the fact that directive psychology aims at sublimating and recombining the elementary tendencies of the personality to the end that it may become harmonious and stable, and that harmony and stability are to some extent ethical qualities." Further: in its social aspect directive psychology "aims at showing how a reconciliation may be effected between the interests of the personality considered as a self-contained individuality, and the same personality considered as part of the social organism." The difference, and, as it would appear, the advantage, of directive psychology over any ethical system lies for Mr. Bligh in the fact that it "ceases to advocate high-sounding ethical principles unless and until it has first created tastes and impulsions which will make those principles operative, and," he adds, "it can only make them operative when it has shown that in relation to particular types of personality they may be objects of desire" (p. 78). It seems to me that in this last statement is exhibited the confusion in thought which militates against the success of Mr. Bligh's interesting venture. To refrain from urging ethical principles until it is possible to appeal to some desire or interest for them, and meanwhile to rouse and stimulate that interest and desire, is on the face of it a wise and sane plan; but to set forth as a tenet that ethical principles can only "be made operative" when shown as desirable objects to certain types of persons, is to make the motivation to moral action singularly dependent upon the demonstrations of a science of "directive" psychology. A more ardent belief in the fostering of these desires and inclinations, coupled with a recognition that these ethical principles are, if anywhere, to be discovered in the "habits and impulses of the individual," would conceivably make such demonstration unnecessary. But the pronouncement that a presentation of ethical principles as "objects of desire" on the part of certain types of people is the sole means of making

them "operative" with others, seemingly is required of Mr. Bligh by his theory of the unpractical and unapplied character of principles, ethical or psychological. For clearly a belief in the possibility of analysis of the data of psychology which would reveal moral implications and disclose practical consequences for the individual rests on the conviction of the practical character and the ethical significance of the data it examines. And by Mr. Bligh's initial assumption this belief is prohibited.

The book is justly entitled to the description given to it of the science of "applied psychology." The foregoing discussion is intended to raise the question whether a science of directive psychology, so described, is possible theoretically or profitable practically. In the attempt made by this book to carve out the field for this new science concerned with human welfare, and tentatively to describe its methods and purposes, there is certainly value and importance. The wideness and sincerity of Mr. Bligh's interest in his subject, together with the incisiveness and independence of many of his comments and observations, bespeak a spirit and strength that will distance objections and obstacles. The suggestion made in this review of a need for the redetermination of the underlying assumption on which the structure of this new science has been erected, springs from the belief that the conception of a given separation between science and experience steals the force and meaning from any attempt to deal rationally with life problems. It is difficult to see how it would be possible to formulate a science of "directive" psychology until conviction obtained of the inherent capability of "psychology" *for* directing. A consideration of the direction of the desires and habits of the individual is of undoubted and unexhausted value and importance. It is possible, however, that such a consideration should be "scientific in the strict sense of the word"; that it should concern itself with analyses of psychological data to determine their practical and ethical implications and consequences; and that it should, in the interests of human welfare, suggest lines of action and of inquiry which would test and modify psychological "principles," and maintain a philosophic consideration of their actual value and function in life.¹

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The Concept of Method. GERHARD R. LOMER. New York: Teachers College, Columbia University. *Contributions to Education*, No. 34. 1910. Pp. 99.

This little book is packed full of thought on the philosophy of method. The author believes that the stress on scientific method, while marking an advance in the progress of education, has too often led to an undue emphasis on the minutiae of experience, and that consequently we have failed to attain to an organic view of the method of experience itself.

¹For a consideration of the directions of the desires and habits of the individual, see Part II., "Theory of the Moral Life," by John Dewey, in "Ethics," by John Dewey and James H. Tufts; and also Professor Dewey's "How We Think."

A philosophical analysis of the method of experience at different stages of the development of the race and also at different stages in the life of the child would show underlying uniformities which should be determinative of the method of education.

The underlying point of view that determines the investigation which Dr. Lomer makes is dominantly that which Dewey has made familiar to us in his "The Child and the Curriculum," and in a less formal way in his "School and Society." The actual experience of the child is to be the starting-point in our discussion of the educational process. But experience is not some sort of entity which we may watch unfold or develop. It is an activity, a process. The reconstruction of experience which we call its development and organization goes on in terms of the interaction between the child with all his infinite promises and unrealized potentialities, on the one hand, and on the other, the social media through which alone these can be realized. These two are the terminal aspects of the educational process. There has been a strong tendency to view education in terms of one of these aspects dominantly, to the undue neglect of the other. If we fall in line with the organic and functional conceptions which are becoming current, we shall avoid this error and see that the fundamental method of education consists in the interaction between the two. The method of education must be conceived as identical with the method of experience itself, namely that of giving form to the experience of the child, only with the addition of such guidance and direction as will realize at the same time both individual development and social efficiency. The general plan of the book is as follows: to attack the problem of the method of human experience, which is also the method of education, through the analysis of several historical systems of thought; to follow this by enough analysis of the theory of evolution to see the significance of the organic conception; and then to sum up in discussions of "The Interpretation of Experience" and "The Function of Method."

The historical systems of the interpretation of experience chosen as typical for this study are those of the Greeks, Bacon, Descartes, Comenius, and Kant. The Greeks analyzed almost every aspect of human experience, the nature of the universe, the nature of man's experience, and the problem of human conduct. The author's discussion of the Greeks culminates in the philosophy of Plato, in which the method of experience is conceived as that of realizing through definite stages of progress from ignorance to wisdom the ultimate "Ideas." This method of experience is determinative, then, for Plato of the method of education. It is hard to understand why the author did not touch at this point upon Plato's account of education in the "Republic," and show in what respects it conforms to his analysis of the method of experience. It is interesting, however, to find him departing from the conception of Plato's philosophy as wholly static, and finding in it a dynamic and functional element. For some reason not apparent Mr. Lomer does not mention Aristotle in this analysis of Greek thought, although at several points in his later discussion he uses Aristotelian conceptions and

harmonizes them with the modern ideas of the organic nature of experience.

With Bacon the emphasis falls on the method of knowledge. His significance from the point of view of an analysis of the method of experience lies in the fact that he emphasized the method of experience as based upon an empirical knowledge of the phenomena of nature. Descartes is significant from the point of view of his emphasis on the method of personal experience. Starting with immediate experience, he seeks to arrive by the process of analysis of this experience at a true method for its organization, interpretation, and evaluation. With him knowledge and reality as aspects of experience can not be separated; they are integral parts of one organic whole. Reality becomes, then, primarily the reality of a *process* rather than one of fact. Comenius emphasized still further the organic nature of experience, especially in relation to the problem of education. "Comenius embodies in an admirable way the first tentative efforts towards the functional conception of education as a phase of human experience."

Kant concerned himself with a criticism of the process of experience itself with reference to determining its limitations and its positive functions. Mr. Lomer sums up the chief implications which his writings have for the problem of method as follows: "(1) His analysis of the character and the nature of human knowledge, though it is carried on rather from the structural point of view, does involve a consideration of the *method* of knowledge as an essential phase. Knowledge must be related to virtuous action; theory and practise are interrelated phases of experience. (2) Kant emphasizes the fundamental creative power of the human mind. Method is a phase of an evolutionary experience. Education is genetic only if it is at the same time teleological. Self-activity is the fundamental method of education."

The theory of evolution Mr. Lomer uses to give an organic interpretation to causation, theory of knowledge, and teleology. "Evolution is another term for 'universal' experience—it is *causation in activity*. . . . Causation is a principle, and it can therefore have no reality unless it is regarded as a function. . . . Causation is the method by which a universe of powers, potentialities, and promises realizes itself. Causation is the potentiality, the *dunamis*, 'energizing,' actualizing itself, making reality. . . . The nature of the thing, its true end, is its development, its evolution, its self-realization in the highest *form* to which its potentiality is capable of reaching. . . . The whole machinery of the universe is machinery only to the mechanically-minded man. To the evolutionist it is a vast, an infinitely vast, growing, living organism." Applying to epistemology the same line of thought as has been applied to causation makes necessary such a readjustment of the point of view of the relation of subject and object that this relation becomes *organic* as well as logical. Knowledge receives a functional interpretation in which its dominant aspect is that of an *activity*. When we get away from the narrow anthropomorphic interpretation of teleology, teleology is made manifest in the cosmic process. Evolution may be considered

as the rational process of cosmical organization and teleology as the science which shows all facts in their necessary causal relations to one another, in organic and functional terms, as parts of a rational scheme of development.

Dr. Lomer uses the historical study and the discussion of the theory of evolution to lead up to his own interpretation of experience. In the light of the previous discussions it becomes evident that the analysis of experience into hard-and-fast and sharply separated kinds is not justified. Distinctions inevitably arise in the process of experience, because experience is a moving active affair in which oppositions, conflicts, problems arise in the interaction of self and environment; but such distinctions are functional and relative to the particular kind of situation with which we have to deal. From the genetic point of view there are three such inevitable distinctions in the complete development of experience. They are self-unconsciousness, self-consciousness, and self-realization. These, I take it, represent different stages in the process of adjustment between the self and its environment. They are modes of experience, not different kinds of experience, and as such are organically related to one another and to the whole process of activity as functionally determining the reorganization of experience. This same line of thought is applied to the category of existence as it functions in experience. There are three levels of existence, organically related to one another, those of mere existence, of potentiality, and of activity. This does not mean, however, that there are three different kinds of existence which enter into our experience, but that there is an ascending scale of values in experience of which we become conscious. The consciousness of values implicitly involves the emergence of standards. The standard is not something external, however, but it also is functionally determined. Various classes of standards are to be distinguished in terms of the functions to be performed in the process of experience as we are confronted with *problems* as to (1) *what* we do, (2) *why* we do it, (3) *how* we do it. The significance for education of this discussion of distinctions within experience as functionally determined seems to be that the educational process is not to be conceived of as a mechanical matter of static elements, whether materials of the curriculum or "faculties" and "powers" of the mind, but rather that we must find the principle of activity and the processes of personality which give dynamic character to the situations in which materials of the curriculum and mental powers will have a functional value. This will have its bearing also on our conception of ends. From this point of view ends are not merely ends; they, too, have a functional significance which gives them pragmatic vitality. Even the mechanical and the teleological interpretations of nature can be harmonized on the basis of this conception of the nature of ends. They merely represent specialized points of view of the same set of facts, the first the point of view of the facts and their relations, the second that of the idea, or form, of which they are the progressive realization.

In his discussion of the function of method, Mr. Lomer attempts to

"show that theory and practise are not two separate entities brought into relation in the course of experience . . . but differentiated aspects in every phase of individual and social activity . . . complementary phases of the function of intelligence in experience." Education can not safely either ignore conscious theory or make theory something external to and imposed upon practise. "Our experience is an organic part of our personality, and our theory and our practise are organic parts of our experience." In like manner education must seek the unity of the genetic and the teleological interpretations of the child and of the teaching process by taking the functional point of view. The two things, the developing child and the ideal of education, must be realized in their organic relation. "It is through this process of interaction that social purposes gain reality, and it is through the same process that the immature potentialities of the children gain ideal value." But inasmuch as the nature of experience furnishes the conditions under which standards, as we have seen, differentiate to perform a function, so also is it a function of method to control experience in harmony with these standards. Control is thus from the functional point of view not an arbitrary, external thing, but is only another expression of the harmonization of the mechanical with the teleological whereby the end is realized through a series of steps marked by order or method. The whole discussion is brought at its conclusion into relation with the two great fundamental ideas of evolution and idealism.

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The Apocryphal Acts of Paul, Peter, John, Andrew, and Thomas. BERNHARD PICK. Chicago: The Open Court Publishing Co.; London: Kegan Paul, Trench, Trübner & Co., Ltd. 1909.

In Vol. XVI. of the *Ante-Nicene Christian Library* appeared (1870) a translation by Alexander Walker of the principal "Apocryphal Gospels, Acts, and Revelations," thirty-three in number. Since then scholarship has been unceasingly at work on this forbidding mass of material, which itself has grown meanwhile considerably in bulk, and far more in the import that unbiased judgment must assign it. In 1883-87-90 was issued the monumental three-volume treatise of Lipsius on "Die apokryphen Apostelgeschichten und Apostellegenden," followed in 1901 by the even more monumental "Acta Apostolorum Apocrypha" of Lipsius and Bonnet—a stately work of 1,167 pages, a worthy sequent to the "Novum Testamentum Graece" of Tischendorf. Close on the heels of these came (1904) the two extraordinarily compendious tomes edited by Hennecke, "Handbuch zu den neutestamentlichen Apokryphen" and the "Neutestamentliche Apokryphen" translated. Almost at the same time the great Egyptologist C. Schmidt still further enriched this literature with two editions of the "Acta Pauli," edited and translated from the Coptic. It is clear, then, without further mention of critical publications, that the time was fulfilled, and that the English reader might justly ask to be put abreast with the march of investigation in this region.

It is to such a demand that Dr. Pick, already known by his "Extracanonical Life of Christ" (1903) and his "Paralipomena" (1908), has responded in useful, laudable, and thankworthy, if not in complete, measure by the publication of the book in hand. It is based avowedly on the critical editions of Lipsius, Bonnet, and Schmidt, and it is said that "the work of Edgar Hennecke has been of great help"—in fact, this latter would appear to have been so largely regulative as to deserve fully such explicit acknowledgment.

On examination, the translation itself would seem to be in the main excellently done. Nevertheless, careful scrutiny discloses occasional lapses, sometimes due apparently to over-reliance on the version of Walker. Thus, in the very beginning we read: "As Paul was going up to Iconium after his flight from Antioch, his fellow-travelers were Demas and Her-mogenes, the coppersmith, full of hypocrisy, and persisted in staying with Paul, as if they loved him." Such English has certainly a queer ring. The word *were* renders neither the German *wurden* nor the Greek *ἐγενήθησαν* (*became*). The meaning would seem to be that D. and H. "joined him on the way and persisted in staying." In the story of the rapt attention of Thamyris "sitting at the window close by," the omission of the specification "of her house" (*iñres Hauses, τοῦ οἴκου*) leaves one in doubt as to the whole scene, as to whether the window was in her house or in that of Onesiphorus, where Paul was preaching. In the "Martyrdom of Paul" (page 48), "persecutors" (*διωχόντων*) should be "pursuers," and "persecute" should be "pursue," for Longus and Cestus were believers, pursuing merely to join, and to receive "the seal of the Lord." In the "Acts of Peter" (page 60) the Latin words are indeed dark enough, but hardly so dark as the English: "and hast added to thy grace a bond connected with the whole world." The obscurity is cleared up in a measure by Usener's suggestion that the *e*'s be omitted from *gratiae tuae*. On page 71 the same word *traderet* is rendered by "betrayed" in connection with Judas, but correctly by "deliver" in connection with Caiaphas, which seems to do injustice to the "co-apostle," whose sobriquet Iskariot appears to mean *deliverer-up*. Page 74, "He had no words with which he otherwise deceived those present," the sense of the Latin being, "He failed of words with which he was wont to deceive bystanders." Page 76, "But I believe that by repenting he will have mercy on me," where the Latin declares, "He will pity me, a (or if) penitent." The last words of Peter on the cross are dun enough for Heraclitus, but "Having been drawn down who cast his origin upon the earth," seems to test the capacity of English syntax rather severely. Enough of such examples!

More careful proofreading was due a work of such learning. Not only are mistakes in number and person of verbs too frequent, along with such lapses as "take a hold" and "former comeliness," but sense-disturbing errors detain the reader and at times defy. Thus, in the long quotation (page ix), "And so almost every fresh editor of such narratives, using that freedom which all antiquity was wont to allow itself in dealing with literary monuments, would reveal the materials which lay before him, excluding whatever, etc.," the word "reveal" remains a riddle till, on

turning to the *Einleitung* of Lipsius, it is found to represent the German "gestaltete," and accordingly should be "revise." More serious is the state of the case on page 115, line 10, where three lines in the Greek, two and one half lines in the German, have been omitted, the eye having wandered from *σταυρῶσαι* in line 9 to the same word in line 12.

Extremely diligent and wide-read as the translator undoubtedly is, Mrs. Lewis's edition of an old Syriac palimpsest of the Acts of Thomas and Reitzenstein's treatment of the metrical portions of the same Acts, would seem to have escaped him.

On the whole, then, with such trivial reservations in detail, the work of Dr. Pick is to be warmly commended as both timely and valuable, and hope is indulged that he may be encouraged to extend such labors much further over the broad field of the Apocrypha. By their very defects these repellent remains are instructive and even momentous, for they show by unanimous and cumulative testimony how Christian origins were treated when conceived in strict historiographic fashion, and the contrast with the New Testament treatment goes far towards refuting the *Historismus* so long uncontested in Germany, which Bousset, however, perceives is now no longer defensible.

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JOURNALS AND NEW BOOKS

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REVUE PHILOSOPHIQUE. March, 1911. *La contagion mentale* (pp. 225-244): G. DUMAS. — A discussion of the various senses in which the term *mental contagion* has been used, resulting in a limitation of it to a nervous trouble due to psychic infection. *L'illusion de Müller-Lyer et son double mécanisme* (pp. 245-284): H. PIÉRON. — A study of the different forms of this illusion, the theories that have been proposed concerning it, and a critical conclusion in favor of a double mechanism of illusion. *Recherches sur l'attention* (pp. 285-312): R. D'ALLONNES. — An attempt at a methodological program for the investigation of the phenomena of attention. *Analyses et comptes rendus: L'année philosophique, XXe année*: J. DELVAILLE. Ramousse, *Le phénomène de l'anarchie intellectuelle dans la conscience moderne*: PALANTE. De Sarlo et Calò, *La patologia mental in rapporto all'etica e al diritto*: J. SEGOND. Fouillée, *La démocratie politique et sociale en France*: D. PARODI. Le Bon, *La psychologie politique et la défense sociale*: G. L. DUPRAT. Edwin Seligman, *L'interprétation économique de l'histoire*: DR. S. JANKELEVITCH. Del Veccio, *Il fenomeno della guerra*: DR. S. JANKELEVITCH. Péladan, *La philosophie de Léonard de Vinci*: L. ARRÉAT. A. Levy, *David Strauss: la vie et l'œuvre*: L. ARRÉAT. E. Zeller, *Kleine Schriften*: M. SOLOVINE.

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NOTES AND NEWS

THE late Professor His, of Leipzig, conceived the idea of establishing in each country a central institute which should have for its chief aim the organization and the coordination of biological research in its own territory, and serve as a means of cooperation with similar institutions in other countries. In other words, his far-reaching scheme implied the establishment of a regular organized army to attack the problems of living matter, which are being assailed at present only by the wasteful methods of guerilla warfare. During the last decade this proposal has been put to a practical test in the United States and Europe (excepting Great Britain) by the establishment, or the recognition, of certain institutions as centers for coordinating researches upon the brain, under the direction of the "Brain Commission" of the International Association of Academies. The success already attained in this domain of biology has encouraged others to follow in the footsteps of the neurologists. During

Whit-week a conference was held in the zoological laboratory of the University of Utrecht for the purpose of founding an International Embryological Institute. Austria, Belgium, England, France, Germany, and Holland were represented at the meeting by workers in the domain of vertebrate embryology; and letters were received from Switzerland and the United States in support of the scheme adumbrated by the conveners of the meeting. Professor R. Bonnet, of Bonn, was elected first president of the institute, and it was decided that the first aims of the new institution should be (1) the collection of complete series of well-preserved embryos of every mammalian order, and (2) a more intimate cooperation between embryologists, for the purpose of attaining a uniformity in nomenclature and the solution of the special difficulties in this field of investigation—*Nature*.

THE Sarah Berliner Research Fellowship for Women (an annual fellowship of \$1,000 "open to women holding the degree of doctor of philosophy or to those similarly equipped," and "available for study and research in physics, chemistry, or biology") and the biennial prize of \$1,000 offered by the Naples Table Association ("for the best thesis written by a woman, on a scientific subject, embodying new observations and new conclusions based on an independent laboratory research in biological, chemical, or physical science") are open to workers in psychology. Applications for the exact conditions should be made to Mrs. C. L. Franklin, chairman of the Sarah Berliner committee, 527 Cathedral Parkway, New York, or to Dr. Jane Welch, Baltimore, Maryland, of the Naples Table Association.

PRESIDENT TAFT, upon recommendation of the secretary of the interior, has forwarded to the senate the nomination of Professor Philander P. Claxton, professor of education in the University of Tennessee, as commissioner of education to succeed Dr. Elmer E. Brown, who recently resigned to accept the chancellorship of New York University.

FRANK A. MANNY, of the education and extension departments of the Western State Normal School, Kalamazoo, Mich., has been appointed director of the training of teachers in the city of Baltimore.

PROFESSOR JOSIAH ROYCE has received the honorary degrees of doctor of letters from Harvard University and of doctor of laws from Yale University.

DR. KNIGHT DUNLAP, associate in psychology at the Johns Hopkins University, has been appointed associate professor.

DR. EDWARD L. SCHAUB, of Cornell University, has been appointed assistant professor of philosophy at the Queens University, Kingston, Canada.

PROFESSOR M. A. CALDWELL, of Ursinus College, has been appointed professor of philosophy at the University of Louisville.

MR. ARTHUR U. POPE, of Brown University, has been appointed assistant professor of philosophy at the University of California.

PROFESSOR ERNST MEUMANN, of the University of Leipzig, has been called to the Kolonialinstitut in Hamburg.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

RUSSELL'S PHILOSOPHICAL ESSAYS

III. HYPOSTATIC ETHICS

IF Mr. Russell, in his essay on "The Elements of Ethics," had wished to propitiate the unregenerate naturalist, before trying to convert him, he could not have chosen a more skilful procedure; for he begins by telling us (p. 3-4) that "what is called good conduct is conduct which is a means to other things which are good on their own account; and hence . . . the study of what is good or bad on its own account must be included in ethics." Two consequences are involved in this: first, that ethics is concerned with the economy of all values, and not with "moral" goods only, or with duty; and second, that values may and do inhere in a great variety of things and relations, all of which it is the part of wisdom to respect, and if possible to establish. In this matter, according to our author, the general philosopher is prone to one error and the professional moralist to another. "The philosopher, bent on the construction of a system, is inclined to simplify the facts unduly . . . and to twist them into a form in which they can all be deduced from one or two general principles. The moralist, on the other hand, being primarily concerned with conduct, tends to become absorbed in means, to value the actions men ought to perform more than the ends which such actions serve. . . . Hence most of what they value in this world would have to be omitted by many moralists from any imagined heaven, because there such things as self-denial and effort and courage and pity could find no place. . . . Kant has the bad eminence of combining both errors in the highest possible degree, since he holds that there is nothing good except the virtuous will—a view which simplifies the good as much as any philosopher could wish, and mistakes means for ends as completely as any moralist could enjoin" (pp. 50-51).

Those of us who are what Mr. Russell would call ethical sceptics will be delighted at this way of clearing the ground; it opens before us the prospect of a moral philosophy that should estimate the

various values of things known and of things imaginable, showing what combinations of goods are possible in any one rational system, and (if fancy could stretch so far) what different rational systems would be possible in places and times remote enough from one another not to come into physical conflict. Such ethics, since it would express in reflection the dumb but actual interests of men, might have both influence and authority over them; two things which an alien and dogmatic ethics necessarily lacks. The joy of the ethical sceptic in Mr. Russell is destined, however, to be short-lived. Before proceeding to the expression of concrete ideals, he thinks it necessary to ask a preliminary and quite abstract question, to which his essay is chiefly devoted; namely, what is the right definition of the predicate "good," which we hope to apply in the sequel to such a variety of things? And he answers at once: The predicate "good" is indefinable. This answer he shows to be unavoidable, and so evidently unavoidable that we might perhaps have been absolved from asking the question; for, as he says, the so-called definitions of "good"—that it is pleasure, the desired, and so forth—are not definitions of the predicate "good," but designations of the things to which this predicate is applied by different persons. Pleasure, and its rivals, are not synonyms for the abstract quality "good," but names for classes of concrete facts that are supposed to possess that quality. From this correct, if somewhat trifling, observation, however, Mr. Russell, like Mr. Moore before him, evokes a portentous dogma: Not being able to define good, he hypostasizes it. "Good and bad," he says, "are qualities which belong to objects independently of our opinions, just as much as round and square do; and when two people differ as to whether a thing is good, only one of them can be right, though it may be very hard to know which is right" (p. 11). "We can not maintain that for me a thing ought to exist on its own account, while for you it ought not; that would merely mean that one of us is mistaken, since in fact everything either ought to exist, or ought not" (p. 7). Thus we are asked to believe that good attaches to things for no reason or cause, and according to no principles of distribution; that it must be found there by a sort of receptive exploration in each separate case; in other words, that it is an absolute, not a relative thing, a primary and not a secondary quality.

That the quality "good" is indefinable is one assertion, and obvious; but that the presence of this quality is unconditioned is another, and astonishing. My logic, I am well aware, is not very accurate or subtle; and I wish Mr. Russell had not left it to me to discover the connection between these two propositions. Green is an indefinable predicate, and the specific quality of it can be given only in intuition; but it is a quality that things acquire under certain

conditions, so much so that the same bit of grass, at the same moment, may have it from one point of view and not from another. Right and left are indefinable; the difference could not be explained without being invoked in the explanation; yet everything that is to the right is not to the right on no condition, but obviously on the condition that some one is looking in a certain direction; and if some one else at the same time is looking in the opposite direction, what is truly to the right will be truly to the left also. If Mr. Russell thinks this is a contradiction, I understand why the universe does not please him. The contradiction would be real, undoubtedly, if we suggested that the *idea* of good was at any time or in any relation the *idea* of evil, or the *intuition* of right that of left, or the *quality* of green that of yellow; these disembodied essences are fixed by the intent that selects them, and in that ideal realm they can never have any relations except the dialectical ones implied in their nature, and these relations they must always retain. But the contradiction disappears when, instead of considering the qualities in themselves, we consider the things of which those qualities are aspects; for the qualities of things are not compacted by implication, but are conjoined irrationally by nature, as she will; and the same thing may be, and is, at once yellow and green, to the left and to the right, good and evil, many and one, large and small; and whatever verbal paradox there may be in this way of speaking (for from the point of view of nature it is natural enough) had been thoroughly explained and talked out by the time of Plato, who complained that people should still raise a difficulty so trite and exploded.¹ Indeed, while square is always square, and

¹ Plato, "Philebus," 14, D. The dialectical element in this dialogue is evidently the basis of Mr. Russell's, as of Mr. Moore's, ethics; but they have not adopted the other elements in it, I mean the political and the theological. As to the political element, Plato everywhere conceives the good as the eligible in life, and refers it to human nature and to the pursuit of happiness—that happiness which Mr. Russell, in a rash moment, says is but a name which some people prefer to give to pleasure. Thus in the "Philebus" (11, D) the good looked for is declared to be "some state and disposition of the soul which has the property of making all men happy"; and later (66, D) the conclusion is that insight is better than pleasure "as an element in human life." As to the theological element, Plato, in hypostasizing the good, does not hypostasize it as good, but as cause or power, which is, it seems to me, the sole category that justifies hypostasis, and logically involves it; for if things have a ground at all, that ground must exist before them and beyond them. Hence the whole Platonic and Christian scheme, in making the good independent of private will and opinion, by no means makes it independent of the direction of nature in general and of human nature in particular; for all things have been created with an innate predisposition towards the creative good, and are capable of finding happiness in nothing else. Obligation, in this system, remains internal and vital.

round round, a thing that is round may actually be square also, if we allow it to have a little body, and to be a cylinder.

But perhaps what suggests this hypostasis of good is rather the fact that what others find good, or what we ourselves have found good in moods for which we retain no sympathy, is sometimes pronounced by us to be bad; and far from inferring from this diversity of experience that the present good, like the others, corresponds to a particular attitude or interest of ours, and is dependent upon it, Messrs. Russell and Moore infer instead that the presence of the good must be independent of all interests, attitudes, and opinions. They imagine that the truth of a proposition attributing a certain relative quality to an object contradicts the truth of another proposition, attributing to the same object an opposite relative quality. Thus if a man here and another man at the antipodes call opposite directions up, "only one of them can be right, though it may be very hard to know which is right."

To protect the belated innocence of this state of mind, Mr. Russell, so far as I can see, has only one argument, and one analogy. The argument is that "if this were not the case, we could not reason with a man as to what is right" (p. 18). "We do in fact hold that when one man approves of a certain act, while another disapproves, one of them is mistaken, which would not be the case with a mere emotion. If one man likes oysters and another dislikes them, we do not say that either of them is mistaken." In other words, we are to maintain our prejudices, however absurd, lest it should become unnecessary to quarrel about them! Truly the debating society has its idols, no less than the cave and the theater. The analogy that comes to buttress somewhat this singular argument is the analogy between ethical propriety and physical or logical truth. An ethical proposition may be correct or incorrect, in a sense justifying argument, when it touches what is good as a means, that is, when it is not intrinsically ethical, but deals with causes and effects, or with matters of fact or necessity. But to speak of the truth of an ultimate good would be a false collocation of terms; an ultimate good is chosen, found, or aimed at; it is not opined. The ultimate intuitions on which ethics rests are not debatable, for they are not opinions we hazard but preferences we feel; and it can be neither correct nor incorrect to feel them. We may assert these preferences fiercely or with sweet reasonableness, and we may be more or less incapable of sympathizing with the different preferences of others; about oysters

The narrowly determinate scope of the good recognized by Plato is a consequence of the single vital direction and of the single moral source attributed by him to the cosmos. Plato would not have been a dogmatic moralist, had he not been a theist.

we may be tolerant, like Mr. Russell, and about character intolerant; but that is already a great advance in enlightenment, since the majority of mankind have regarded as hateful in the highest degree any one who indulged in pork, or beans, or frog legs, or who had a weakness for anything called "unnatural"; for it is the things that offend their animal instincts that intense natures have always found to be, intrinsically and *par excellence*, abominations.

I am not sure whether Mr. Russell thinks he has disposed of this view where he discusses the proposition that the good is the desired and refutes it on the ground that "it is commonly admitted that there are bad desires; and when people speak of bad desires, they seem to mean desires for what is bad" (p. 7). Most people undoubtedly call desires bad when they are generically contrary to their own desires, and call objects that disgust them bad, even when other people covet them. This human weakness is not, however, a very high authority for a logician to appeal to, being too like the attitude of the German lady who said that Englishmen *called* a certain object "bread," and Frenchmen *called* it "pain," but that it *was* "Brod." Scholastic philosophy is inclined to this way of asserting itself; and Mr. Russell, though he candidly admits that there are ultimate differences of opinion about good and evil, would gladly minimize these differences, and thinks he triumphs when he feels that the prejudices of his readers will agree with his own; as if the constitutional unanimity of all human animals, supposing it existed, could tend to show that the good they agreed to recognize was independent of their constitution. In a somewhat worthier sense, however, we may admit that there are desires for what is bad, since desire and will, in the proper psychological sense of these words, are incidental phases of consciousness, expressing but not constituting those natural relations that make one thing good for another. At the same time the words desire and will are often used, in a mythical or transcendental sense, for those material dispositions and instincts by which vital and moral units are constituted. It is in reference to such constitutional interests that things are "really" good or bad; interests which may not be fairly represented by any incidental conscious desire. No doubt any desire, however capricious, represents some momentary and partial interest, which lends to its objects a certain real and inalienable value; yet when we consider, as we do in human society, the interests of men, whom reflection and settled purposes have raised more or less to the ideal dignity of individuals, then passing fancies and passions may indeed have bad objects, and be bad themselves, in that they thwart the more comprehensive interests of the soul that entertains them. Food and poison are such only relatively, and in view of particular bodies, and the same ma-

terial thing may be food and poison at once; the child, and even the doctor, may easily mistake one for the other. For the human system whiskey is truly more intoxicating than coffee, and the contrary opinion would be an error; but what a strange way of vindicating this real, though relative, distinction, to insist that whiskey is more intoxicating in itself, without reference to any animal; that it is pervaded, as it were, by an inherent intoxication, and stands dead drunk in its bottle! Yet just in this way Messrs. Russell and Moore conceive things to be dead good and dead bad. It is such a view, rather than the naturalistic one, that renders reasoning and self-criticism impossible in morals; for wrong desires, and false opinions as to value, are conceivable only because a point of reference or criterion is available to prove them such. If no point of reference and no criterion were admitted to be relevant, nothing but physical stress could give to one assertion of value greater force than to another. The shouting moralist no doubt has his place, but not in philosophy.

That good is not an intrinsic or primary quality, but relative and adventitious, is clearly betrayed by Mr. Russell's own way of arguing, whenever he approaches some concrete ethical question. For instance, to show that the good is not pleasure, he can avowedly do nothing but appeal "to ethical judgments with which almost every one would agree" (p. 56). He repeats, in effect, Plato's argument about the life of the oyster, having pleasure with no knowledge. Imagine such mindless pleasure, as intense and prolonged as you please, and would you choose it? Is it your good? Here the British reader, like the blushing Greek youth, is expected to answer instinctively, No! It is an *argumentum ad hominem* (and there can be no other kind of argument in ethics); but the man who gives the required answer does so not because the answer is self-evident, which it is not, but because he is the required sort of man. He is shocked at the idea of resembling an oyster. Yet changeless pleasure, without memory or reflection, without the wearisome intermixture of arbitrary images, is just what the mystic, the voluptuary, and perhaps the oyster find to be good. Ideas, in their origin, are probably signals of alarm; and the distress which they marked in the beginning always clings to them in some measure, and causes many a soul, far more profound than that of the young Protarchus or of the British reader, to long for them to cease altogether. Such a radical hedonism is indeed inhuman; it undermines all conventional ambitions, and is not a possible foundation for political or artistic life. But that is all we can say against it. Our humanity can not annul the incommensurable sorts of good that may be pursued in the world, though it can not itself pursue them. The impossibility which people labor under of being satisfied with pure pleasure as a

goal, is due to their want of imagination, or rather to their being dominated by an imagination which is exclusively human.

Another appeal to the chance peculiarities of human nature is made by Mr. Russell in his argument for "organic unities." "Some things," he says (p. 53), "which in isolation are bad or indifferent are essential ingredients in what is good as a whole, and some things which are good or indifferent are essential ingredients in what is bad as a whole"—for it must not be forgotten that this Hegelian sword has two edges, and cuts both ways. Mr. Russell, like Mr. Moore, has been driven to take this position by the need of justifying the various complex and highly contingent ideals to which they happen to be attached; but it hardly seems a position congruous with their general philosophy, for it deals with unities too obviously the sport of apperception. It belongs rather to that idealism which reduces "things" to momentary concretions in discourse, and the elements of them to abstractions, so that various collocations of these elements, being really different things, may well have different and opposite values. When the values lie in the apperceptions, not in the objects, the value of the apperception of a part may be as disparate as you choose from the value of the apperception of the whole. Sugar, which would cloy if taken alone, and lemon, which would set one's teeth on edge, may make an innocent mixture; but this is a mixture of elements which *might* have been perceived separately, not a mixture of the values which the separate apperceptions would have had, if they had occurred. If, in order that I might have my drink, I had been first obliged to take the ingredients separately, the value of the whole (if I still persisted in admitting it) would be *guilty* of the evil in the parts as parts, since it would, for its own good, create those evils. This is the guilt of tyranny. So likewise, if the value of some part can not be realized without precipitating the realization of a whole which is bad, the good of the part is *guilty* of the evil of that whole. This is the guilt of folly or vice.

It seems impossible, therefore, to agree unconditionally with Mr. Russell when he says that "the position of some optimists, that all the evil in the world is necessary to constitute the best possible whole, is not logically absurd, though there is, so far as I know, no evidence in its favor." That whole would be, in any case, a tremendously *guilty* good, since the evils it contains in solution are actually apperceived separately as well; and if, in spite of that, this guilty good were the best possible, all possible goods would have to be terribly villainous. But many possible goods are guiltless and sweet; and if any one, in the last desperation of optimism, pretends to find these pure excellencies inferior to the others, we can not indeed refute him; but, if he is sincere, we may disown his tempera-

ment as distinctly barbarous. He would be guilty of what Mr. Moore calls the "naturalistic fallacy"; he would make what exists the standard (not the basis, as in true naturalism) of what ought to exist. What is barely conceivable, therefore, is not that this should be the best possible world, but that there should exist a will monstrous enough to find it so; an inhuman judgment which no logic or force could compel mankind to conform to. Mr. Russell, however, since he hypostasizes "organic unities," is obliged to admit that such a tyrannical optimism might possibly be absolutely right, in which case we ought all to share it, and to surrender every human ideal of beauty or goodness: an instance which shows clearly how the hypostasis of the good, meant to vindicate the moral sense, is in serious danger of stultifying it.

The author's estrangement from reality reappears in his treatment of egoism, and most of all in his "Free Man's Religion." Egoism, he thinks, is untenable because "if I am right in thinking that my good is the only good, then every one else is mistaken unless he admits that my good, not his, is the only good" (p. 46). "Most people . . . would admit that it is better two people's desires should be satisfied than only one person's. . . . Then what is good is not good *for me* or *for you*, but is simply good." "It is, indeed, so evident that it is better to secure a greater good for *A* than a lesser good for *B*, that it is hard to find any still more evident principle by which to prove this. And if *A* happens to be some one else, and *B* to be myself, that can not affect the question, since it is irrelevant to the general question who *A* and *B* may be." To the question, as the logician states it after transforming men into letters, it is certainly irrelevant; but it is not irrelevant to the case as it arises in nature. If two goods are somehow rightly pronounced to be equally good, no circumstance can render one better than the other. And if the locus, or the "organic unity," in which the good is to arise is somehow pronounced to be indifferent, it will certainly be indifferent whether that good arises in me or in you. But how shall these two pronouncements be made? In practise, values can not be compared, nor organic unities determined, save as represented or enacted in the private imagination of somebody: for we could not conceive that an alien good *was* a good (as Mr. Russell can not conceive that the life of an ecstatic oyster is a good) unless we could sympathize with it in some way in our own persons; and on the warmth which we felt in so representing the alien good would hang our conviction that it was truly valuable, and had worth in comparison with our own good. The voice of reason, bidding us prefer the "greater" good, no matter who is to enjoy it, is also nothing but the force of sympathy, bringing a remote existence before us vividly *sub specie boni*.

Capacity for such sympathy measures the capacity to recognize duty and therefore, in a moral sense, to have it. Doubtless it is conceivable that all wills should become cooperative, and that nature should be ruled magically by an exact and universal sympathy; but this situation must be actually attained in part, before it can be conceived or judged to be an authoritative ideal. The tigers can not regard it as such, for it would suppress the "organic unity" called ferocity, which makes, in their eyes, the chief glory of the universe. Therefore the inertia of nature, the ferocity of beasts, the optimism of mystics, and the selfishness of men and nations must all be accepted as conditions for the peculiar goods, essentially incommensurable, which they can generate severally. It is misplaced vehemence to call them intrinsically detestable, because they do not (as they can not) generate or recognize the goods we prize.

In the real world, persons are not abstract egos, like *A* and *B*, so that to benefit one is clearly as good as to benefit another. Indeed, abstract egos could not be benefited, for they could not be modified at all, even if somehow they could be distinguished. It would be the qualities or objects distributed among them that would carry, wherever they went, each its inalienable cargo of value, like ships sailing from sea to sea. But it is quite vain and artificial to imagine different goods charged with such absolute and comparable weights; and actual egoism is not the thin and refutable thing that Mr. Russell makes of it. What it really holds is that a given man, one-self, and those akin to him, are qualitatively better than other beings; that the things they prize are intrinsically better than the things prized by others; and that therefore there is no injustice in treating these chosen interests as supreme. The injustice, it is felt, would lie rather in not treating things so unequal unequally. This feeling may, in many cases, amuse the impartial observer, or make him indignant; yet it may, in every case, according to Mr. Russell, be absolutely just. The refutation he gives of egoism would not dissuade any fanatic from exterminating all his enemies with a good conscience; it would merely encourage him to assert that what he was ruthlessly establishing was the absolute good. Doubtless such conscientious tyrants would be wretched themselves, and compelled to make sacrifices which would cost them dear; but that would only extend, as it were, the pernicious egoism of that part of their being which they had allowed to usurp a universal empire. The twang of intolerance and of self-mutilation is not absent from the ethics of Mr. Russell and Mr. Moore, even as it stands; and one trembles to think what it may become in the mouths of their disciples. Intolerance itself is a form of egoism, and to condemn egoism intolerantly is to share it.

I can not help thinking that a consciousness of the relativity of values, if it became prevalent, would tend to render people more truly social than would a belief that things have intrinsic and unchangeable values, no matter what the attitude of any one to them may be. If we said that goods, including the right distribution of goods, are relative to specific natures, moral warfare would continue, but not with poisoned arrows. * Our private sense of justice itself would be acknowledged to have but a relative authority, and while we could not have a higher duty than to follow it, we should seek to meet those whose aims were incompatible with it as we meet things physically inconvenient, without insulting them as if they were morally vile or logically contemptible. Real unselfishness consists in sharing the interests of others. Beyond the pale of actual unanimity the only possible unselfishness is chivalry—a recognition of the inward right and justification of our enemies fighting against us. This chivalry has long been practised in the battle-field without abolishing the causes of war; and it might conceivably be extended to all the conflicts of men with one another, and of the warring elements within each breast. Policy, hypnotization, and even surgery may be practised without exorcisms or anathemas. When a man has decided on a course of action, it is a vain indulgence in expletives to declare that he is sure that course is absolutely right. His moral dogma expresses its natural origin all the more clearly the more hotly it is proclaimed; and ethical absolutism, being a mental grimace of passion, refutes what it says by what it is. Sweeter and more profound, to my sense, is the philosophy of Homer, whose every line seems to breathe the conviction that what is beautiful or precious has not thereby any right to existence; nothing has such a right; nor is it given us to condemn absolutely any force—god or man—that destroys what is beautiful or precious, for it has doubtless something beautiful or precious of its own to attain.

The consequences of a hypostasis of the good are no less interesting than its causes. If the good were independent of nature, it might still be conceived as relevant to nature, by being its creator or mover; but Mr. Russell is not a theist after the manner of Socrates; his good is not a power. Nor would representing it to be such long help his case; for an ideal hypostasized into a cause achieves only a mythical independence. The least criticism discloses that it is natural laws, zoological species, and human ideals, that have been projected into the empyrean; and it is no marvel that the good should attract the world where the good, by definition, is whatever the world is aiming at. The hypostasis accomplished by Mr. Russell is more serious, and therefore more paradoxical. If I understand it, it may be expressed as follows: In the realm of eternal essences,

before anything exists, there are certain essences that have this remarkable property, that they ought to exist, or at least that, if anything exists, it ought to conform to them. What exists, however, is deaf to this moral emphasis in the eternal; nature exists for no reason; and, indeed, why should she have subordinated her own arbitrariness to a good that is no less arbitrary? This good, however, is somehow good notwithstanding; so that there is an abysmal wrong in its not being obeyed. The world is, in principle, totally depraved; but as the good is not a power, there is no one to redeem it. The saints are those who, imitating the impotent dogmatism on high, and despising their sinful natural propensities, keep asserting that certain things are in themselves good and others bad, and declaring to be detestable any other saint who dogmatizes differently. In this system the Calvinistic God has lost his creative and punitive functions, but continues to decree groundlessly what is good and what evil, and to love the one and hate the other with an infinite love or hatred. Meanwhile the reprobate need not fear hell in the next world, but the elect are sure to find it here.

What shall we say of this strangely unreal and strangely personal religion? Is it a ghost of Calvinism, returned with none of its old force but with its old aspect of rigidity? Perhaps: but then, in losing its force, in abandoning its myths, and threats, and rhetoric, this religion has lost its deceptive sanctimony and hypocrisy; and in retaining its rigidity it has kept what made it noble and pathetic; for it is a clear dramatic expression of that human spirit—in this case a most pure and heroic spirit—which it strives so hard to dethrone. After all, the hypostasis of the good is only an unfortunate incident in a great accomplishment, which is the discernment of the good. I have dwelt chiefly on this incident, because in academic circles it is the abuses incidental to true philosophy that create controversy and form schools. Artificial systems, even when they prevail, after a while fatigue their adherents, without ever having convinced or refuted their opponents, and they fade out of existence not by being refuted in their turn, but simply by a tacit agreement to ignore their claims: so that the true insight they were based on is too often buried under them. The hypostasis of philosophical terms is an abuse incidental to the forthright, unchecked use of the intellect; it substitutes for things the limits and distinctions that divide them. So physics is corrupted by logic; but the logic that corrupts physics is perhaps correct, and when it is moral dialectic, it is more important than physics itself. Mr. Russell's ethics is ethics. When we mortals have once assumed the moral attitude, it is certain that an indefinable value accrues to some things as opposed to others, that these things are many, that combinations of them have values not be-

longing to their parts, and that these valuable things are far more specific than abstract pleasure, and far more diffused than one's personal life. It is also true (though I have not had space to follow Mr. Russell here) that the value of what is good is not in the least dependent on freedom of the will or on indeterminism, nor on the operation of final causes or providence in the world. For this relief much thanks. What a pity if this pure morality, in detaching itself impetuously from the earth, whose bright satellite it might be, should fly into the abyss at a tangent, and leave us as much in the dark as before!

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DISCUSSION

DO WE FORGET THE DISAGREEABLE?

THE specific object of this paper is to offer a few suggestions and the results of a little experimentation on the relationship of disagreeable feeling to recall. In the simplest form of learning, "learning by trial and error," we begin with activity of an aimless sort, and by a process of selection eliminate all such movements as result in disagreeable consequences, saving as an habitual reaction to the situation one which proves agreeable in its outcome. We banish disagreeable reactions. Do we forget disagreeable experiences?

In a very interesting and suggestive article entitled "The Oblivescence of the Disagreeable," published in this JOURNAL,¹ Dr. Hollingworth maintains that we do. He regards such forgetting as an unquestionable fact, and as but an example of the tendency in trial and error learning to eliminate disagreeable reactions. I do not dissent entirely from Dr. Hollingworth's view, but it seems to me that it needs a very important amendment. He points out in the very beginning of his article the fact, so often noted, that the memory of an episode that was very disagreeable may be decidedly agreeable. It is quite as true that the opposite may occur. Agreeable incidents may be uncomfortably remembered. The classic literary expression of the former fact is Virgil's account of how Æneas tried to comfort his followers, shipwrecked on the coast of Africa, by telling them that at some future day they would find delight in telling of their hardships; "Olim haec meminisse juvabit." So Dante, in Tennyson's rendering, has phrased the opposite tendency in his "Sorrow's crown of sorrow is remembering happier things." The memory of a

¹ Vol. VII., No. 26.

disagreeable experience may be agreeable, disagreeable, or indifferent. Which effect we get depends very largely on the relation of the past experience to our present situation. If it constitutes a difficulty overcome, or one of trifling importance in relation to our subsequent history, we are apt to view it with pleasure or indifference. On the other hand, if the episode is one that had bad consequences, the effect of which is still in evidence, we may shudder to recall it. It is not pleasant to recall a contemptible act of which one was guilty, a failure that has left a permanent record upon the estimate placed by others upon one, or the death of a relative whose loss has limited one's life.

In Dr. Hollingworth's article he does not, it seems to me, keep constantly in mind the difference between forgetting experiences that were disagreeable when we had them and banishing the thought of experiences when their memory is disagreeable. We might very well tend to get rid of disagreeable memories, while we would not at all tend to forget disagreeable experiences merely because they were such, since the memory of them might not be disagreeable. We have thus before us two issues, each of which I should like briefly to discuss: (1) Do we tend to forget disagreeable experiences? (2) Do we tend to banish and so get rid of disagreeable memories?

1. Do we forget the disagreeable? Much of Dr. Hollingworth's argumentation is devoted to establishing the contention that we do. I can not take up all of his points in detail without over-emphasizing the controversial element in my discussion. It seems to me, however, that his non-theoretical evidence can be grouped under two heads. First, he mentions many cases where phases of our own lives or of the lives of others seem to us, as we think of them, singularly free from those harsher elements that were so uncomfortable when we experienced them. These cases, I think, can all be reduced to instances where either the memory of a disagreeable circumstance is itself pleasant or indifferent, or the memory is still disagreeable and is banished because of its present quality. Under the first heading would come Mark Twain's memories of his travels abroad, the canonization of saints, etc. Here, I venture to suggest, what happens is not that the incidents that were disagreeable were forgotten, nor even that the fact that they were disagreeable has disappeared from memory, but rather that the memory of an event, as a whole, or of the career or achievements of a character, is a pleasant one, doubtless because of the relation of these achievements to one's present life. One is not forgetting the disagreeable, but merely having a pleasant memory of that which originally included much that was disagreeable. Under the second explanation come such cases as forgetting a criminal's past record in judging him. One is so over-

come by sympathy for the present plight of the man that the memory of his misdeeds is uncomfortable, since it commands one to do a disagreeable duty. We banish the inconvenient thought. In the same way, I think, we may explain Freud's cases, cited by Dr. Hollingworth.

The second line of evidence offered by Dr. Hollingworth consists of material collected by Dr. Colgrove. The latter sent out a questionnaire containing the query, "Do you recall pleasant or unpleasant experiences better?" To his questionnaire in general he received 1,658 answers. He does not state how many answered his inquiry about remembering the pleasant or unpleasant. In general, he found that the greater number thought they tended to remember better the pleasant. It must be noted that these are but opinions, probably not verified by any careful study on the part of those who made the answers. I have made an attempt to get at the facts by experimenting, and I offer my results, such as they are, for inspection. I worked with ten subjects. Each person was asked to give me incidents that were remembered from his or her life. These incidents began with the earliest that could be recalled, and were scattered, with some attempt at an even distribution, over the entire life. Seven of my subjects were college students in the neighborhood of twenty years of age. Three were approaching middle life. Six were men, four women. I asked them to give these incidents just as they arose in memory, without selecting one sort rather than another. My results indicated that this rule was followed rather conscientiously, and in some cases I felt a little as though I had transgressed upon the office of a confessor. As the incidents came I jotted down a note which enabled me to recall each to the subject who gave it. After getting from a person a hundred such memories, I asked him to grade each of these according to whether it represented an incident which when it happened was very agreeable, moderately agreeable, indifferent, moderately disagreeable, or very disagreeable. The thousand incidents recalled were divided as follows: very agreeable, 28.3 per cent.; agreeable, 26.8 per cent.; indifferent 11.8 per cent.; disagreeable, 12.6 per cent.; very disagreeable, 20.5 per cent. Putting in each case all the agreeable experiences, and also all the disagreeable ones, we get

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| Agreeable, | 55.1 per cent. | Average deviation, 6.7 per cent. |
| Indifferent, | 11.8 per cent. | Average deviation, 4.6 per cent. |
| Disagreeable, | 33.1 per cent. | Average deviation, 4.7 per cent. |

The comparative smallness of the average deviation seems to indicate that these percentages are fairly representative for the classes of persons tested. It would seem, therefore, that the hypothesis that we

forget the disagreeable rather than the agreeable is verified by my results. Some of my subjects expressed themselves after the experiment as thinking that they remembered better the disagreeable. All of them recalled more of the agreeable. One might suspect that we should find a similar state of affairs among those of Dr. Colgrove's subjects who thought that they remembered better the disagreeable.

I am, however, inclined to think that these facts, so far from proving, as they may seem to do, that we forget the disagreeable, may actually tend to support the view that there is no such tendency. Three reasons may be advanced to sustain this view. First, we may suspect that the subjects were less willing to mention disagreeable experiences than those of the opposite type. I do not think that this motive had any appreciable influence on the character of the memories related to me. It would lead to the concealment only of experiences of which the subject felt ashamed, or such as were of a very private nature but might be either agreeable or the opposite, or, perhaps, incidents the memory of which now gives pain. Moreover, some agreeable experiences might have been suppressed on account of fear of being regarded as conceited or self-congratulatory. Careful observation of the subjects and a study of their records convince me that there was not enough suppression to affect appreciably the averages.

A second objection to my averages might be found in the possibility that my subjects failed to give accurately the feeling of their original experiences. Incidents that were in reality disagreeable might be thought to have been the opposite. The feeling tone of the later memory might be confused with that of the original incident. This error might work to swell the percentages of either agreeable or disagreeable experiences recalled. On Dr. Hollingworth's theory it would have unduly enlarged the percentage of agreeable ones. However, I am convinced from the character of my material that erroneous judgments as to the feeling tone of the original experience were rare.

A third objection to the interpretation of my percentages as indicating the forgetting of the disagreeable is more important. It is quite likely that in the lives of most of us the agreeable incidents far outnumber the disagreeable ones. I have not attempted to make any actual calculations on this matter, yet I am inclined to think that such an effort might not be so fruitless as at first it is likely to seem. However, there is much to suggest the view that most of us find the daily run of our lives filled with incidents on the whole pleasurable, and that experiences admittedly distasteful are comparatively uncommon. To be felt as such they must be so disagreeable that this quality overcomes our natural zest for the new

and the exciting, or our obstinate tendency to take things philosophically or to present a good appearance. If, then, the agreeable greatly outnumber the disagreeable experiences, the fact that 33 per cent. of memories represent disagreeable experiences while only 55 per cent. represent agreeable ones, might actually mean that we remember a larger proportion of our disagreeable experiences than we do of our agreeable ones.

2. So far as our first question, Do we forget the disagreeable? is concerned, I am inclined to think that the facts we have examined suggest a negative answer. There remains the second question. Do we tend to get rid of disagreeable memories? Here our analogy of trial and error learning seems to apply directly. We shrink back from disagreeable reactions. We dislike to entertain disagreeable ideas. However, we sometimes do disagreeable things because we fear more disagreeable ones or hope for a reward. So, too, we attend to disagreeable ideas in order that the situations that they represent may be avoided or done away with. The idea of a disagreeable thing gets its disagreeable quality from the belief in the present or future existence of that which it represents, and if through the idea we can avoid the fact, it would seem to be the highest prudence to court the idea. Consciousness here has the paradoxical function of keeping a thing in mind just to get rid of it.

If disagreeable thoughts do not lead to efficient activities, it is likely that they tend to disappear. Healthy men of the world do not talk or think much of death. *Memento mori* is advice that finds little favor with them. Yet if they could see any chance of finally avoiding that dread event by thinking of it, I suspect that this mental indifference would turn in most cases into profound interest. When thought can not cure the situation, we, instead, cure the thought by forgetting it. We forget not so much disagreeable ideas as useless ideas, ideas the distasteful quality of which stimulates us to no devices that modify their object. Thought struggles with a disagreeable memory or idea that portrays any of the interests of the self in an unsatisfactory position, endeavoring either to discover some activity by which this position may be remedied, or some interpretation by which the irritation of it can be assuaged. When we can neither do anything to remedy the case, nor see it differently, it is likely that we tend to forget.

In truth, the function of cognition is such that for us to forget the disagreeable would mean that we would be deprived of one of the principal resources of thinking. Trial and error learning forms habits by eliminating certain reactions and saving others as habitual responses. Conscious learning proceeds by thinking over ideas of possible reactions to the emergency at hand, comparing them with

beliefs as to the present facts, the laws of nature, etc., and eliminating such as do not conform. But in order to get ideas for its consideration, it must remember the failures of trial and error learning as well as its successes. To remember only the successes would leave us with no material for thought except that which is already embodied, as it were, in the habitual reactions built up by trial and error learning. To readjust these habits by thinking, to use intelligence to learn anew, requires ideas of the effect of the other ways of reacting. To forget failures, the disagreeable, would mean to forget at least a large part of that by which mental or ideational readjustment is made possible. If we remember in order to readjust, it would seem unlikely that we should forget all except that which offers to consciousness in the main only something to be amended. Even in trial and error learning intelligence appears in remembering the futility of certain efforts as contrasted with the success of others. Such intelligence cuts short the process of experimentation. We remember to eliminate. Moreover, the experience thus acquired furnishes the basis of later reasonings in regard to new situations. We remember in order to modify. Thus conscious experience represents a saving of that not useful now, but useful only in the emergencies in which it is to be recalled.

The feeling that accompanies its recall has no necessary connection with that which characterized its acquisition. Then, the failure was disagreeable; now, the thought of it may be agreeable, since it offers a possible way out of a difficulty. Then, a certain reaction, and so also the thought of it, was agreeable, and the reaction became a habit. Now, that reaction, and its thought, are disagreeable, since to-day they fail to adjust us properly. Cognition is descriptive, neutral, and aims at universality, truth. It strives to anchor certain ideas to certain facts, so that they may be dependable for reflection. Feeling is selective, partial, and clings to the particular situation, giving it a characterization likely to be true only for the moment. We strive to banish *disagreeableness* by every device in our power. But before we resort to the ostrich remedy, and banish disagreeableness by forgetting the incidents with which it is associated, we strive to modify either these situations or our interpretations of them so that the thought of them is no longer a source of discomfort. Otherwise thinking would be impossible, for the difficult situations that provoke it would promptly be forgotten rather than thought out.

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THE PROBLEM OF THE "EGO-CENTRIC PREDICAMENT"

I THINK it is much to be regretted that Professor Perry's idea to which he has given the name "the ego-centric predicament"¹ has not been more actively discussed. I regard it as one of the best things that have been said in recent epistemological criticism, and as a real contribution to the subject. As Professor Perry's idea deserves cordial recognition, and as even his brethren in new realism have remained silent the present writer ventures a tardy appreciation.

The situation "undoubtedly exists," and Professor Perry has admirably illustrated the logic of it: "Thus I can not conclude that English is the only intelligible form of speech simply because whomsoever I understand speaks English." Neither, however, can I conclude that English is not the only intelligible form of speech. Under the conditions of the metaphor, all the evidence advanced in support of either position has to be passed upon by those who understand only English.

It is clear from Professor Perry's presentation of the case that the idealist commits a logical fallacy in his resolution of the "predicament." The situation lends itself quite as consistently to the realist's interpretation as to that of the idealist. It is as though an admirer of negative values were to insist that because $x^2 = 4$, x must equal -2 . When all that we know about the situation is that $x^2 = 4$, to argue that $x = -2$ and not $+2$, or $+2$ and not -2 , is to commit the same fallacy that the idealist commits in commenting upon perception. Under the assumed conditions, $x = \pm 2$, and that would seem to be the end of it. Are not the idealist and the realist in the same box so far as this particular problem is concerned, and do they not commit the same fallacy in so far as they select one interpretation or another of the ego-centric predicament? For whether it is a question of the value of x as inferred from a given value of x^2 , or of the character of a thing unknown as inferred from the character of the same thing known, makes no dialectical difference. The fallacy consists, as Professor Perry has shown, in arbitrarily excluding one or more alternative conclusions; as if one were to infer that a man has been talking about his horses because he has been talking about his domestic animals. Just because the "ego-centric predicament" is an essentially ambiguous situation, it is unfortunate, not merely for the idealist or for the realist—it renders their problem artificial, just as artificial as would be the question whether x is really $+2$ or really -2 when x is actually ± 2 .

¹ This JOURNAL, Vol. VII., No. 1, and *Mind* for July, 1910, "The Cardinal Principle of Idealism."

To assume, however, as we have been doing, that the "ego-centric predicament" permits only two interpretations, is to repeat the above fallacy of forgotten alternatives. The thing when known may be identical with the thing as known, or it may have none of the characters which the known thing has, which means that it may have none at all, or that it may have a rich content of novel characters, or that it may have some familiar characters combined with some novel characters in varying degrees. It is as though we were to sit at a play and wonder what kind of clothes the actors had left in their dressing rooms, our only possible source of information being the play itself. When the last curtain is down, what happens to Falstaff? Does he keep on the same clothes or change them all? Or does he change some of them? Or does he take them all off, having none to replace them? The play is silent on that point. But the realists no less than the idealists want light on this very question. Their preoccupation with it seems, at times, to interfere with an interest in the play. But I hear myself answered, "Ah, but you must not forget that it is a play, 'ein Schauspiel nur'; reality is more than a spectacle. We love to speculate on the qualities of Portia when she reaches the sidewalk. To be sure, we can never find out; that is the fault of the 'ego-centric predicament,' to use a metaphor from metaphysics."

There are, no doubt, still people who speculate on the squaring of the circle; they are, however, not well informed mathematicians. When it was shown that the terms in which the problem was stated precluded the possibility of the desired equation, the squaring of the circle ceased forthwith to be a problem, because it had been solved. The question, What is the ratio? is answered by the reply, There is no ratio. Similarly the question whether $x = +2$ or -2 is answered by showing that $x = \pm 2$. If the problem of choosing logically between alternatives is extinguished by discovering that the very logic of the situation prevents the elimination of alternatives, is not the problem solved by that discovery? Just as $x = \pm 2$, the epistemological problem of the ego-centric predicament is solved by taking all the alternatives together. Or if this is not a solution, then the conditions themselves logically prohibit a solution, which is the same as saying that they do not provide a problem of the logical type.

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REVIEWS AND ABSTRACTS OF LITERATURE

Five pamphlets by JULIUS PIKLER: *Das Beharren und die Gegensätzlichkeit des Erlebens* (Stuttgart, 1908), *Über Theodor Lipps' Versuch einer Theorie des Willens* (Leipzig, 1908), *Zwei Vorträge über Dynamische Psychologie* (Leipzig, 1908), *Über die biologische Funktion des Bewusstseins* (Bologna, 1909), *Die Stelle des Bewusstseins in der Natur* (Leipzig, 1910).

The author of these interesting pamphlets here outlines his mechanistic theory of consciousness and conduct, and a most ingenious, original theme it is. Professor Pikler believes that all psychologists have gone astray. Their first step is the fatal one; they investigate sensation qualities, feeling qualities, the details of imagery, memory, and the like. But none of these has any important significance, either in the actual practise of the person experiencing them or in a scientific understanding of psychic life. Not in the lowest, broken flutterings of mentality, but in its highest development and in its broadest sweep and tendency, do we catch some true glimpse of its nature. We should accordingly look to the thought processes as they take place, not as shaped by the exigencies of any one moment, but as they go on in all manners of crises and habitudes. If we do this we shall, the author believes, discover that expectation is the fundamental psychic fact; that it depends not in the least upon *specific* sense qualities, but solely upon the opposition and dynamic exclusion of one quality by another.

What is the character of this opposition? Is it a logical one, as Hegel would have said? Not at all; it is purely physical at bottom. It is, we might add, not merely an intellectual distinction; it is a polarizing tendency in the world-stuff itself which gives rise to all intellectual distinctions. Professor Pikler finds in this polarity the origin of consciousness, an explanation of perception, and a mechanistic theory of inductive reasoning. Every influence affecting the nervous organism tends to persist therein, and some quality of it always succeeds in doing so; if, now, an opposite influence operates, consciousness results, *and with consciousness the unrestricted belief in the universal reality of the particular content*. This belief is pure expectancy. Says Professor Pikler:

Das als erstes objektiv daseiende Glied eines Systems zu einander gegensätzlicher Gegenstände wird in jener seiner Qualität, welche es zu den anderen Gliedern gegensätzlich macht, bewusst nicht erlebt; es hinterlässt dennoch eine Tendenz zum Erleben (Weitererleben) und Erwarten desselben. Ist nämlich später ein gegensätzliches Gliedobjektiv da, so wird in folge dieser Änderung auf einmal die Tendenz zum Weitererleben des erstern Gliedes und im Gegensatz dazu, als Überraschung, das Erleben des Gegengliedes, bewusst. Jenes Glied eines Systems, welches als erstes objektiv da war, tritt also zuerst in der besieigten Tendenz und daher als Vorstellung ins Bewusstsein.

If, he says, one has always heard only second-rate pianos, read only inferior poets, breathed only city air, and lived strenuously, one senses the tone of a good piano as soft, Goethe as thoughtful, mountain air as

refreshing, and rational living as peaceful; *but without ever having previously sensed previously heard pianos as metallic, or the inferior poets as thoughtless, or city air as depressing.*

Perception is brought to pass by the simultaneous cooperation of a physical event which corresponds to the existence of the object that is perceived and the physical residuum of an earlier and *opposite* physical event. The purely objective physical resistance to a purely objective physical tendency to repeat (or persist) yields perception. Thus consciousness arises out of purely physical elements. This does not mean that physical energy is consumed in the making of consciousness; the fact is, consciousness is nothing but the resistance to a transformation of physical energy.

If perception is physical, so, too, is thought. It is only the releasing of an objective, physical tendency to repetition (in the thinker's body); this tendency being now freed from the restraint of an opposite one. Now, work is done only by the release of energy; and *so it is that thought determines conduct*, for thought delivers physical tendencies from resistance, it sets them free and thereby sets up motions in the body.

This smacks of radical intellectualism, and certainly it runs counter to most pragmatic doctrines, which generally look upon consciousness as a peculiarly trying incident in the course of behavior, not as the origin of behavior. Professor Pikler seems, in fact, almost anti-empirical in his complete rejection of the efficiency of specific sensory qualities. He plainly has his own variety of "pure thought" (mechanical though it be), which somehow decides actions, now thus, now so, in supreme indifference to all that the pragmatist would describe as the important concrete details of a situation.

Für die biologisch so wichtige Funktion unserer Wahrnehmungen, dass sie uns auf Grund einfacher Induktion . . . die Bedingungen von Tatsachen lehren, ist ihr absoluter Inhalt ganz gleichgiltig, ist eben nur das erforderlich, dass sie Gegensatz, Ausschliessung aufweisen, diese dynamische Wirksamkeit besitzen.

And, he adds by way of elucidation, if instead of heat and cold we had, in all cases where we now sense these, wholly different *qualia*, we might still predict when the soup on the stove would boil, provided only that the new *qualia* were opposites. Hence, psychologists are guilty of a serious misdirection when they confine themselves to a study of the absolute contents of sensation and perception, neglecting their profounder contrariety or mutual exclusiveness. *For sensation and perception have a biological function only in so far as they indicate the overcoming of contraries and thereby enable us to draw distinctions and to recognize situations.* Recognition is a fundamental fact of psychic life, for upon it all inference, intuition, and analysis rest.

But is it not curious that the author quite misses the fact that blue is the opposite of yellow just because blue is blue and yellow is yellow? Or, to generalize, that a quality *A* has an opposite and dynamic excluder, rather than two or a million, just because of its own complete specificity? The oppositional relation can be established only between complete speci-

ficiencies; the simple exclusiveness which we find between the members of a dichotomy, for instance, will never produce the great variety of conscious situations which we actually find. Thus, to become conscious of a triangle, I must have, on Professor Pikler's theory, a previously established inner determination or tendency of a "contrary" physical object; but this "contrary" object can not be *any* non-triangular one, for that would mean that a sound or a flavor or a perfume, or any conceivable object without three sides, would all be equally efficient as "contraries." Were they, though, Professor Pikler's account of the origin of consciousness would fail altogether, inasmuch as anything could be a sufficient pre-condition for the experiencing of anything else.

But suppose we do admit that the specific sensory quality is necessary to fix the contrary one; now we must ask the writer to go a step further and say that every specific quality of which we can be aware has its own specific contrary. Then arises an empirical difficulty which will, I fear, prove insuperable: it is as old as Aristotle, but age can not level it. What is the contrary of an isosceles triangle with a two-inch base and four-inch sides? What is the contrary of the letter "q," what of the three-beat rhythm at the rate of 40, what of the timbre of a certain violin in Munich?

Professor Pikler's interpretation of mechanical resistance and "freedom" is not lightly to be dismissed; for in it are the germs of a wholly new hypothesis about the psychophysical. He points out that resistance and freedom are not data in quite the same sense that heat, light, and motion are; they are, as it were, existent only inside the very tendencies to motion themselves. To be sure, we can sense resistance, but only in ourselves, *i. e.*, only when some parts of our own bodies are pressed or pulled. The resistance or freedom in an external object can not be communicated; and *in this respect they are precisely like consciousness*. Again, resistance and freedom are connected with energies (exclusively), but they are not energy. For, if they were energy, then energy would have to disappear whenever a resistance increased. But energy never disappears, though resistance and freedom do constantly fluctuate. It is clear, then, that the latter are, in some manner, correlates of energy patterns. And here again they resemble consciousness remarkably; for nothing is more obvious to introspection than that consciousness is not energy, while we are equally sure, through physiological and physical inquiries, that consciousness is established by energies in *some* mode of their behavior, though energy is never transformed into consciousness. In a third manner, now, mechanical resistance and freedom resemble consciousness; for, while they are not energy, they are an internal feature of its disposition and, as such, *determine the course of events*. And fourthly resistance and freedom can not be located exclusively in the moving object nor yet outside of it. They belong to the reciprocal action of the internal and the external; in them we find conditions outside of the inner tendencies being taken up into the tendencies (adaptation, organic change, modifying of impulses and ideas); and conversely, the tendencies

make themselves felt in the field beyond their origin (reconstruction of an objective situation).

Professor Pikler is hot on the trail of some important interpretations, but he seems to be pressing toward them without due regard for empirical details. When criticizing current psychology, he is at his best; when defending mechanistic philosophy, he is powerful. But, before accepting his hypothesis of oppositions, which underlies his whole structure, the reviewer would like to have Professor Pikler tell him just what qualities (physical objects) do operate in antithetical pairs to effect consciousness. Lacking such information, Professor Pikler's readers will not be convinced.

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Manual of Mental and Physical Tests. GUY MONTROSE WHIPPLE. Baltimore: Warwick and York. 1910. Pp. ix + 534.

The preparation of such a volume as the present is a task for the performance of which all users of the methods of experimental psychology should feel a considerable debt of gratitude. What is attempted is to review something over fifty of the more established experimental methods, to epitomize the more important results obtained with them, and to formulate a standard procedure for their future conduct. The author's "Problemstellung" is an excellent one, insisting on the necessity of adopting intercomparable methods of investigation, while fully recognizing the tentative character of any catalogue of tests on the basis of present experience. After brief chapters on the handling of statistical data and anthropometric measurements, the book devotes some sixty pages to the motor functions, about ninety to the sensory, and nearly three hundred to those of the higher mental processes. This proportion is more understandable when one bears in mind the endeavor to avoid technical complications as far as possible, and the fact that the development of tests without special apparatus has been much greater on the side of the intellectual functions than elsewhere. The same consideration might well account for such an omission as that of simple reaction time, though not so well for the omission of one like Crampton's test of condition,¹ whose place is not adequately filled by the mere spirometer test, which preserves the name of a measure of "vital capacity." The author's confidence in dynamometric measurements seems to be rather greater than the reviewer's, though the objections are all taken into account. On the sensory side, oculomotor control receives considerable attention. One regrets to find no consideration of the McCallie audiometer, which was apparently designed with special reference to testing at the ear itself, and avoiding the errors involved in the ordinary use of electric current. Sensibility to pain is probably a matter for "experiment" rather than "test" in the sense in which the author distinguishes between these two terms, but there can be little question of the value of the pressure balance principle as here elaborated, both for pressure and pain sense.

¹"A Test of Condition: Preliminary Report," *Medical News*, September, 1905.

In a conventional enumeration of the tests of the higher mental processes, one might, like the astronomer's visitor, be less impressed with the information gathered about them, than at how it was ever possible to find out their names. It is pleasing to observe that the present volume keeps such terminological generalities rather in the background, and lays emphasis rather upon the test as a standard situation, whose result is summed up in the subject's entire reaction to it, even though we may be compelled to express this result in a symbol of considerable "condensation." No test ever measured, or presumably ever can measure, a subject's "attention," "suggestibility," or "fatigue"; but it should give an objective account of the subject's behavior under specific conditions, though involving many functions in largely varying degrees.

The better developed experimental procedures in *Aussage*, suggestibility, memory, imagination, etc., are presented in more than ordinary variety. The most valuable contribution of this part of the book is probably, however, a full presentation of the much-discussed Binet-Simon tests, which should go far towards increasing their accessibility to those who have occasion to use them. The "unaccountable omission" of this portion, if not indeed of the whole volume, is that of the discrete free association experiment, which probably outranks, both in importance and in the extent to which it is understood, the great majority of the "mental tests." It is an opening paragraph of a section of experimental psychology dealing with rather intimate and fundamental aspects of mental reaction and adaptation, the bulk of which has yet to be written.

To say that the book is useful imposes the responsibility of indicating a proper use for it. Though not negligible as a guide to research, it is scarcely intended as such, but should serve its best purpose as a handbook for those who, in the classroom, scarcely less so in the clinic, meet with the necessity of more definite experimental procedures in the particular lines of mental activity along which the book is written. The copious bibliographical references should prove an especially useful complement. Much experimental psychology could be taught out of it as a laboratory text-book; in concreteness and workability it is doubtful if it has any superiors in its field.

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The Essentials of Character: A Practical Study of the Aim of Moral Education. EDWARD O. SISSON New York: The Macmillan Company. 1910. Pp. x + 214.

It is an encouraging sign that scientific men are at last beginning to turn their attention to the great practical social problems of human life. Professor Sisson's book is but one of many which indicate this trend. But the problem which he considers, that of the moral education and development of the individual, is certainly a central one among the practical problems of our social life. It is beginning to be perceived that the problem of individual character lies back of all other practical social

problems; and that the control of the development of moral character in the individual is, therefore, a matter of preeminent social concern. While we may never have a formal science of ethology to deal with this problem, as John Stuart Mill suggested, the time is certainly ripe to bring together the results of scientific psychology and sociology in order to show their bearing upon this problem. This is what the author attempts to accomplish in this book.

Professor Sisson quite properly approaches his problem from the standpoint of individual psychology. He is to be commended for emphasizing at the very outset the importance of the instincts, or native tendencies, of the child. For these, as he shows, "are absolutely the only stuff out of which human character can grow." He considers them as the basis, the raw material, upon which education must act, and not as so many hereditary elements which acquired traits must some way or other be made to displace. Character, as the habits of mature life, is shown to grow directly out of these instincts or native tendencies, and not to be due to the superadding on to them of various acquired traits. Education, in other words, is not a creative, but a selective process, encouraging desirable impulses and discouraging undesirable ones.

From this standpoint, Professor Sisson goes on to discuss the formation of habit in general and especially of certain habits which greatly influence moral character, such as obedience, industry, thoughtfulness, and truthfulness. Here again he shows that all habits must be rooted in natural, spontaneous tendencies, and that the prevalent idea that they may be created by mere repetition is based upon bad psychology. With the same point of view he goes on to discuss tastes, personal ideals, and conscience. In a brief chapter on the social ideal he sets forth the social nature of morality and approaches the development of character from the social standpoint. The necessity of social intelligence, of sympathy, kindness, and the love of human kind in moral education are emphasized. It seems to the reviewer, however, that a great deal more might have been done with this chapter than what was done. It is a question, indeed, if the whole book could not have been better developed, after some preliminary attention to the importance of instinct and other biological elements, by approaching the problem from the social side. Moral character, as Professor Sisson admits, is essentially a social creation and a social value. As such it would seem that the problem of moral character could be most illuminatingly treated by emphasizing continually the social standpoint. However, this is a criticism on the emphasis rather than on the content of the book.

The most valuable feature of the book is the emphasis which in chapter ten is placed upon the importance of religion in moral training. This is perhaps the main contribution of the book to the discussion of the problem of moral education. Why it should be a contribution at all, if the mass of the American people were not very strangely wrong-headed upon this question, is difficult to say. Professor Sisson shows the unquestionably close psychological connection between moral character and religion,

and therefore the importance of the essentially religious element, which is by no means to be confounded with the sectarian, in moral training.

Judging the book as a whole, one can only say that it is psychologically and sociologically sound, and that it has utilized to a very large degree the essential material which is available in positive science for the solution of this problem. The book deserves a wide reading on the part of educators and all interested in practical social and moral problems.

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JOURNALS AND NEW BOOKS

THE INTERNATIONAL JOURNAL OF ETHICS. April, 1911. *The Meaning of Good and Evil* (pp. 251-268): J. S. MACKENZIE. - The good is the object of rational choice, and the object of rational choice is an intelligible universe, apprehended as existent and as intelligible. It is doubtful whether any other content of the good can be specified apart from this. *Goethe's Influence on Carlyle*, II. (pp. 269-282): F. MARIAN STAWELL. - Goethe contributed the idea of the free development of personalities through work, a sense of reverence for reality, and a faith in the attainment of immortality. *The Question of Moral Obligation* (pp. 282-298): RALPH BARTON PERRY. - There is a logical or strictly ethical question concerning moral obligation, a question concerning its meaning or objective structure, that can not be answered by any account of the genesis, history, or psychological structure of the sentiment of moral obligation. *The Spencerian Formula of Justice* (pp. 298-313): H. S. SHELTON. - Spencer's deductions from his principles need to be corrected by a more empirical study of the facts. *The Fascination of Pantheism* (pp. 313-326): W. S. URQUHART. - A psychological analysis of the intellectual, emotional, and moral appeal of pantheism. *The Sex Problem* (pp. 326-339): M. E. ROBINSON. - A plea for a more natural and rational attitude toward the facts of sex life, for the removal of sex stimulants, and for more equal marriage relationships. *Reviews*: W. G. SUMNER, *Folkways*: HENRY BERKOWITZ. Carwith Read, *Natural and Social Morals*: R. S. VARLEY. Alfred Vierkandt, *Die Stetigkeit im Kulturwandel*: T. WHITTAKER. Charles de Garmo, *Principles of Secondary Education*: C. H. JOHNSON. H. Bergson, *Time and Free Will*: A. E. TAYLOR. H. E. Cushman, *A Beginner's History of Philosophy: Vol. I.*: A. O. LOVEJOY. J. M. E. McTaggart, *A Commentary on Hegel's Logic*: S. WATERLOW. Georges Remacle, *La philosophie de S. S. Laurie*: L. J. RUSSELL. Irving Babbitt, *The New Laokoon*: W. B. PITNIN. G. A. Reid, *The Laws of Heredity*: M. LIGHTFOOT EASTWOOD. Teachers in Harvard University, *A Guide to Reading in Social Ethics and Allied Subjects*: FRANK THILLY. Havelock Ellis, *Studies in the Psychology of Sex*: J. A. THOMSON. Howard W. Odum, *Social and Mental Traits of the Negro*: CHARLES A. ELLWOOD. Henry Frank, *Modern Light on Immortality*: J. A. LEIGHTON.

REVUE PHILOSOPHIQUE. April, 1911. *La néo-sophistique pragmatiste* (pp. 337-366): A. FOUILLÉE. - An analysis and criticism of pragmatism taken from the author's "La Pensée et les nouvelles écoles anti-intellectualistes." *L'étude scientifique du spiritisme* (pp. 267-383): E. BOIRAC. - An approval of the claims of spiritism to have its hypotheses given scientific consideration. *Epidémies mentales et folies collectives* (pp. 384-407): G. DUMAS. - A classification of the facts of mental contagion, epidemics, and collective insanities in preparation for the study of their psychopathology. *Mathématiques et sciences concrètes* (pp. 408-414): G. H. LUQUET. - A response to objections made to the author's "L'induction en mathématiques" by Goblot. *Analyses et comptes rendus*. Paulhan, *La logique de la contradiction*: L. DUGAS. *La solidarité sociale dans le temps et dans l'espace*: DR. S. JANKELEVITCH. A. W. Small, *The Meaning of the Social Sciences*: DR. S. JANKELEVITCH. Gusti, *Die Grundbegriffe des Pressrechts*: G. RICHARD. Donati, *Interesse è attività giuridica*: G. RICHARD. R. Navarro, *Ensayo de una filosofía feminista*: J. PÉRÈS. Drs. J. Philippe et G. Paul-Boncour, *L'éducation des anormaux*: R. MEUNIER. M. Louis, *Doctrines religieuses des philosophes grecs*: C. HUIT. E. Bréhier, *Chrysispe*: C. HUIT. W. Tatar-kiewicz, *Die Disposition der Aristotlischen Prinzipien*: C. HUIT. G. Cimbali, *L'Anti-Spedalieri*: J. SEGOND. G. Bruno, *Opere Italiane*: J. PÉRÈS. *Revue des périodiques étrangères*.

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NOTES AND NEWS

Science for July 14 publishes the Phi Beta Kappa oration delivered by Professor Royce before the Harvard Chapter of the society on June 29. Professor Royce took for his theme "James as a Philosopher," emphasizing particularly what in James's philosophy he regards as making significantly for the advance of American culture. In this connection he

classifies James with Edwards and Emerson, naming the three as our most nationally representative philosophers. "Of these three there can be little question that, at the present time, the most widely known abroad is James. Emerson has indeed found a secure place in the minds of the English-speaking lovers of his type of thought everywhere; and has had an important part in the growth of some modern German tendencies. But James has already won, in the minds of French, of German, of Italian, and of still other groups of foreign readers, a position which gives him a much more extended range of present influence than Emerson has ever possessed." We quote also the following paragraph as illustrative of the spirit of the oration: "What interests us is that, in 'The Will to Believe,' as well as in 'The Pluralistic Universe,' this beautifully manifold, appreciative, and humane mind, at once adequately expressed, and, with true moral idealism transcended the caprices of recent American ethics. To this end he lavishly used the resources of the naturalist, of the humanist, and of the ethical dialectician. He saw the facts of human life as they are, and he resolutely lived beyond them into the realm of the spirit. He loved the concrete but he looked above towards the larger realm of universal life. He often made light of the abstract reason, but in his own plastic and active way he uttered some of the great words of the universal reason, and he has helped his people to understand and to put into practise these words."

THE British Psychological Society met at Manchester on June 24. The following papers were read: Note on the perception of movement in the environment, Dr. T. Graham Brown; The experimental investigation of emotional dispositions, C. Burt; A new classification of experiences, Dr. H. Watt; A simple teaching apparatus for illustrating Listing's law, Professor C. S. Sherrington; A chemical comparison of the brain substance of the child and the adult, Professor J. Lorrain Smith and Dr. W. Mair.

THE fifteenth Oxford Summer Meeting will be held at Oxford from August 3 to 28. The general scheme of lectures is intended to illustrate the place and part of Germany in world history, and its contribution to literature, art, science, theology, and philosophy.

THE South African Association for the Advancement of Science held its ninth annual meeting at Bulawayo from the third to the eighth of July, under the presidency of Professor P. D. Hahn.

THE fortieth meeting of the French Association for the Advancement of Science will be held this year at Dijon from July 31 to August 5, when M. Charles Lallemand will be the president.

DR. ARTHUR ORLO NORTON, assistant professor of education at Harvard, is writing a history of the German universities, and he is now in Italy to consult the libraries, especially in Florence and Padua.

A MONUMENT to John Stuart Mill is being erected at Avignon, where he resided during the last years of his life, and where he died in 1873.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE IDEALIST TO THE REALIST¹

THIS paper attempts to consider briefly both the contemporary criticisms on idealism and the constructive theories advanced by the neo-realists.

I

The recent criticisms of idealism may be grouped under three main heads: first, those which oppose idealism on the ground that it is subversive of some important system of beliefs; second, those which charge idealism with fundamental inconsistency; and, third, those which claim that idealism is based on unjustifiable assumptions.

1. The charge that idealism flies in the face of common sense, of science, and of logic reappears in the writings of many realists. In the words of Professor Woodbridge, idealism "forces upon one a view of things which is not an extension and a refinement of [the] natural, instinctive view, but a radical transformation of it."² And Professor Spaulding introduces his summary of realistic doctrine with the statement that realism "agrees with common sense and with science."³ In answer to this charge that idealism does not agree with "common sense" it may first be pointed out that final judgment on a technical system can not be passed on the basis of its agreement with popular beliefs. It would go hard with the scientists were ultimate physical theories thus rated; and constructive realism, as will later be argued, would fare no better.⁴ But the idealist need not content himself with this protest. There is much to favor the view that primitive philosophizing is rather spiritistic than materialistic. All children personify the stubborn walls and

¹ Paper, with slight changes, read before the American Philosophical Association in Princeton, New Jersey, December 27, 1910.

² "The Problem of Consciousness," in *Studies by Former Students of Charles Edward Garman*, p. 146.

³ "The Program and First Platform of Six Realists" (after this cited as "Program"), this JOURNAL, 1910, Vol. VII., p. 400. Cf. W. B. Pitkin, *ibid.*, p. 398.

⁴ Cf. page 456, below.

doors with which they come in contact; and the facts of magic, of fetichism, and of nature-worship indicate that realities which every-day dualistic philosophy conceives as non-ideal were regarded by primitive men as spiritual beings. In other words, the argument from instinctive belief, were it admitted, would not tell unambiguously for the non-idealists.

With even greater vigor, since the days of Berkeley,⁵ it has been urged that idealism is opposed to the results of scientific investigation. Woodbridge speaks of "the contrast which the content of natural science presents to idealistic philosophy,"⁶ and Pitkin claims for realism that "it is logically demanded by all the observations and hypotheses of the natural sciences including psychology."⁷ I shall, however, postpone a consideration of these claims to the second part of this paper, where I shall seek to show that all actual scientific constructions may be, and should be, idealistically conceived.

A third argument, precisely parallel with those now under discussion, claims for logic an axiomatic value, and argues against idealism as violating sundry rules of logic or as unconformable to certain logical procedures. A large part of the "Program and Platform" recently published by "six realists" is taken up with this argument from the incompatibility of idealism with logic. Thus Professor Marvin says: "There are certain principles of logic which are logically prior to all . . . metaphysical systems."⁸ The idealist accepts this statement, but insists that the fundamental principles of logic, to which only it applies, can not by any chance be essentially opposed to idealism, since logic is no more nor less than a systematic formulation of the laws of consistent thinking. Thus the idealist finds, in the assertion just quoted, an implicit opposition to materialism and no argument whatever against idealism of any type. The alleged oppositions of logic to idealism consist, in fact, in the selection of some empirical and subsidiary logical principle and in the demonstration of its incompatibility with idealism. Perry's "ego-centric predicament" is the cleverest and most unblushing instance which I know.⁹ Admitting that the *I* is a peculiarly ubiquitous fact which "can not be eliminated from one's field of study," he insists that this "mere fact" must not be allowed to weigh in our calculations, since it can not be investigated by the "method of agreement and difference." This is a startling instance

⁵ "Principles of Human Knowledge," paragraphs 50, 58.

⁶ *Op. cit.*, p. 150.

⁷ "Program," p. 398.

⁸ "Program," p. 395 (3).

⁹ This JOURNAL, 1910, Vol. VII., pp. 5 ff.

of readiness to sacrifice empirical fact—admittedly universal—to methodological theory. The method of agreement and difference is a way of studying the relations of such phenomena as are difficult of observation because they are not always present. And yet we are called upon to eliminate from our philosophy an ever-present fact, the ego, because just this, its ubiquity, prevents our studying it by a logical method invented as an aid in the investigation of inconstant phenomena. Thus, to sum up our reply to this criticism: idealism can not be contradictory to the fundamental laws of logic, for these are laws of mental self-consistency. And subsidiary logical “laws” and “methods” are neither sacrosanct nor axiomatic.

2. We turn now to consider the alleged inconsistency of the idealistic position. It is urged by contemporary realists, as by those of Berkeley’s day, that the distinction actually made by idealists between subject and object, percept and image, is possible only on the supposition that non-mental reality exists.¹⁰ The idealist admits that he makes this distinction. He, like other men, recognizes a difference between present and external, and merely imagined, objects. But he distinguishes the two kinds of things, not as extra-mental and mental, but as objects respectively of his shared and of his unshared consciousness, or as objects of one self and of many selves. His desk is an external thing because it is actual or possible object of many selves’ consciousness; the scene which he is now *imaging* and *not describing* is not external because it is the object of his private, unshared consciousness.¹¹

This idealistic theory of perception, presupposing as it does the existence of many selves, has, however, to take account of a second and more important charge of inconsistency. Idealism, it is urged, is necessarily solipsistic. The basal tenet of idealism, the critics insist, is the peculiar or unique certainty of the existence of myself, a single conscious self. But the idealist (so the realists point out) who refuses to argue from this certainty of his own existence to the existence of extra-mental objects is equally debarred from arguing to the existence of selves external to him. This objection has been urged by Moore,¹² by H. W. Carr,¹³ by Perry,¹⁴ and by others.

I shall not pause to criticize any details in the different state-

¹⁰ For elaborations of this argument, *cf.*, among others, Fullerton, “A System of Metaphysics,” pp. 99 ff., 117 ff., 367–368; and G. E. Moore, *Mind*, 1903, N. S., XII., pp. 433 ff.

¹¹ At least one realist, W. P. Montague, makes this distinction among others, between perception and imagination. *Cf.* “Consciousness as Energy,” in “Essays in Honor of William James,” pp. 108–109.

¹² Proceedings of the Aristotelian Society, 1905–1906.

¹³ *Ibid.*, 1907–1908.

¹⁴ “The Hiddenness of Mind,” this JOURNAL, 1909, Vol. VI., pp. 29 ff.

ments of this argument because I am, for myself, prepared to accept its main conclusion. I believe, in a word, that solipsism is a sharp horn of the pluralistic idealist's dilemma. To the monistic idealist, on the other hand, it presents no unavoidable difficulty. For the monistic idealist's position is, in brief, the following: In being conscious of myself I know myself as limited, thwarted, circumscribed. But one can not know oneself as bounded without knowing the existence of a boundary; and to be aware of a boundary *as boundary* one must be aware of a something beyond. That is to say, in the experience of my narrow, single self, I experience also a somewhat-beyond-myself. And when I reflect on the nature of this somewhat-beyond, I must conclude that the distinction between it and me is partial, or relative, since between ultimately separate realities there can be no relation and consequently not the relation of knowing.¹⁵ This something-beyond-myself, therefore, which I directly experience in being conscious of my self-limitation, must be like me, must—in other words—be other-self.

But it is high time to come to closer issue with our antagonists. Their most fundamental criticisms have yet to be stated. They argue that idealism is based on unjustified assumptions, of which the first is the assumption that an object, because known, is therefore mental in nature. The realistic position is curtly stated by Holt:¹⁶ "The entities (objects, facts, *et cact.*) under study in logic, mathematics, and the physical sciences are not mental in any usual or proper meaning of the word 'mental.' The being and nature of these entities are in no sense conditioned by their being known."

This is an accurate and an uncompromising statement of the difference between the two parties. For the idealist does hold as fundamental just this doctrine which the realist attributes to him, that is to say, he believes that objects, as known, are mental. But he does not regard this belief as an assumption. He holds, on the contrary, that a close examination of the objects of logic, of mathematics, and of the physical sciences discloses their ideal character. The following, in brief, is the result of the idealist's empirical study of the known object: An object of physical science contains one or all of the following characters: (1) sensible qualities, as extension, motion, weight, color, sound, fragrance, etc.; and (2) relations, as spatial and temporal positions, permanence or impermanence, likeness and difference, degree, singleness or multiplicity or totality. Objects of logic and of mathematics differ from every-day "physical

¹⁵ The realist denies precisely this statement. I am not here attempting to argue the point, but merely to outline the teaching of a form of idealism which is not solipsistic.

¹⁶ "Program," p. 394, I., 1. Cf. Marvin, *ibid.*, p. 395, 8.

objects'' in that they consist exclusively in relations. The idealist *discovers* by examination of objects—he does not (as the realist accuses) *assume*—that both sense qualities and relations are mental. The following paragraphs will amplify this brief account from the idealist's standpoint of the known object.

The idealistic view of sense qualities must first be considered. It is of utmost importance to state clearly that the contemporary idealist abandons some of the traditional arguments for his doctrine. He realizes that Berkeley's objection to distinguishing primary from secondary qualities may as well be turned to favor materialism as to favor idealism. And he admits (as indeed Berkeley admitted) that the argument based merely on the variableness of qualities—according as the percipient is sick or well, warm or cold, distant or near, and the like—does not prove, even though it suggests, the ideality of objects.¹⁷ But the idealist rests his case not on reasoning of this sort, but on the *results of direct observation* coupled with *the inability of any observer to make an unchallengeable assertion about sense qualities save in the terms of idealism*. To be more explicit: the idealist demands that his opponent describe any immediately perceived sense object in such wise that his description can not be disputed. The realist describes an object as, let us say, yellow, rough, and cold. But somebody may deny the yellowness, the roughness, or the coldness; and this throws the realist back on what he directly observes, what he knows with incontrovertible and undeniable certainty, namely that *he is at this moment having a complex experience* described by the terms yellowness, coldness, and the like (an experience which he does not give himself). This statement, and only this, nobody can challenge. And this statement embodies the result of immediate experience.

The idealist next subjects the relation to an analysis parallel to that of the sense quality. The realist, when challenged to describe his object-as-related, has said (we will suppose) that it is a sphere three inches in diameter, the fruit of a tree whose seed he saw planted two years ago. But what, asks the idealist, *are* "spherical form," "two years," "the relation of fruit to seed"? Once more, all that the realist is immediately sure of—all that he can maintain in case his assertions are disputed—is that he has certain experiences indicated by the words he has used.

And if the realist seek to escape this conclusion by arguing that the real object is the object as *inferred*, and that (though the char-

¹⁷ "Principles," paragraph 15. For an "effective presentment of the case for realism" which spends its whole force in criticism of this argument from the variableness of qualities, cf. T. P. Nunn, "Are Secondary Qualities Independent of Perception?" *Proceedings of the Aristotelian Society*, N. S., X., 1909-10.

acters of the object as immediately known are mental) yet the characters known through inference are, or may be, extra-mental—the answer will be plain: Qualities and relations are the only discovered factors of objects as known. The inferred object itself must, therefore, consist in relations, in sense qualities, or in a combination of the two; or else it is an object of unknown nature.¹⁸ The immediately following paragraphs will consider the possibility of the existence of unknown objects, but the present discussion concerns objects as known. And these objects, analyzed into their constituents, have been found—not assumed—to be forms of experience.

A final charge remains. The second of the alleged assumptions of idealism is to be refuted. All that precedes has concerned objects-as-known. The realist now insists that the idealist has in any case no right to assert the non-existence of unknown objects. To quote Professor Montague: The intuitional argument of the idealists “consists of a confused identification of a truism and an absurdity. The truism: *We can only know that objects exist when they are known.* The absurdity: *We know that objects can only exist when they are known.* . . . It is to the failure to perceive [this fallacy] . . . that idealism owes its supposedly axiomatic character.”¹⁹ In other words, the fact that the objects of our knowledge are, as such, *known* is no reason for asserting that objects can not exist unknown. I propose to deal with this argument very simply by admitting its contention, but, at the same time, pointing out that, kept within its proper limits, it is utterly insignificant. As an idealist, I agree to check myself in every exuberant denial of the possibility that unknown extra-mental objects exist. But I do not hereby recant my idealism. For the truth is that the hypothetical unknown, extra-mental reality is utterly negligible. Such an *x*, an utterly unknown extra-mental object, is not the object of physical science, of logic, or of mathematics; it does not consist in sense qualities—that is, it is not extended or in motion, colored or sounding; it is not a relation—that is, it is not a substance, or a thing, or a cause, or a reality, or an entity, or a term, or a function. In a word, it is more than negligible, it is necessarily left out of account by men with only ordinary human endowment. Such an extra-mental reality is indeed unknowable, since it is by nature unknown. Therefore the thinker can have no concern with it and, of all people, the realist of to-day, whose fetish is logic, should eschew illicit commerce with the inconceivable and the indefinable.

¹⁸ Cf. Fullerton, *op. cit.*, pp. 52 ff., 117, 147, *et al.*

¹⁹ “Program,” p. 396.

II

We have so far been concerned with the criticisms of the realists on idealism. It is fair now to ask for their positive doctrine. And it must be confessed that the realists are more lavish of polemic than of constructive formulation. It is hard, for example, to understand why the six realists call their program a "platform"; for it clearly sets forth what they avoid, but gives no hint where they stand. And, to take another example, that subtle realist G. E. Moore is far more concerned to demonstrate that *esse* is not *percipi* than to tell what *esse* is. Other realists offer definitions so tautological or so self-contradictory that it is hard to take them seriously. Fullerton, for example, the dualist who takes the short-cut to realism just before reaching the end of the road to idealism, defines non-external reality in two ways. He says, most often, that the external thing is the phenomenon "in the objective order"²⁰—as much a truism as if he should say that the external thing is external. But he earlier describes the external world as made up of sensations "abstracting from the relation of knowledge"²¹—which is as inherently incredible as if one should speak of ether vibrations abstracting from motion.

The implication of most neo-realistic writers is, however, that all reality is describable in terms of the physical sciences. When, for example, Woodbridge conceives of the universe as a complex of terms and relations, and counts consciousness among these relations as coordinate with space and time,²² he is properly interpreted by Montague as assuming that the terms to which the relations are subordinate are physical, not psychical. More specific is Montague's conception:²³ Following Ostwald, he describes the universe in terms of energy and conceives the distinction between physical and psychical as identical with that between kinetic and potential energy.

Before entering on a discussion, necessarily condensed, of the "real" conceived as physical, a preliminary remark should be made: It should be pointed out that the realist has no right to the implication that in rejecting idealism and adopting a physical form of realism he finds ready-to-hand a compact system of ultimate physical doctrine. On the contrary, the physicists of one group, headed by Pearson and Mach, are frankly idealistic, reduce facts of science to contents of the mind, describe physical realities as made up of sense impressions, and define scientific law as "mental short-

²⁰ "A System of Metaphysics," pp. 372 ff.

²¹ *Ibid.*, p. 118.

²² "The Problem of Consciousness," in "Garman Studies," p. 159.

²³ "Consciousness a Form of Energy," in "Essays in Honor of William James," pp. 105-134.

hand.”²⁴ Still other scientific conceptions, whether realistically or idealistically interpreted, turn out to be mere tautologies. Such are Clerk Maxwell’s definitions of matter as that which may have energy communicated to it, and of energy as that which passes from matter to matter.²⁵ This is to the full as illuminating as Oliver Herford’s “Alphabet of Celebrities”:

Q is the Queen, so noble and free;
For further particulars look under V.
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V is Victoria noble and true;
For further particulars, look under Q.

It is not fair, of course, to dwell on so palpable a slip in the provisional definitions of a book no longer new. But Whetham, writing only a few years ago, finds in recent theories the same tendency to circular definitions and to explanations which are not ultimate. “The success of such theories,” he says, “does but shift the mystery of the unknown. Matter is a persistent strain-form flitting through a universal sea of ether: we have explained matter in terms of ether. Ether in its turn is described as a fairly closely packed conglomerate of minute grains in continual oscillation. We have explained the properties of the ether. . . . But what of the grains of which the ether is composed? . . . Has a new ether more subtle than the first to be invoked to explain our properties, and a third ether to explain the second? . . . An ultimate explanation of the simplest fact remains, apparently forever, unattainable.”²⁶

This reminder that no realist may find refuge from the tempest of conflicting metaphysical views in a sanctuary of fixed and satisfying physical doctrine, is, however, preliminary only to the opposition of idealist to realist. The idealist, in fact, maintains that so-called physical reality, however conceived, reduces to sensible quality, to relation, or to a combination of the two; or else reduces to utterly unknown reality. Quality and relation, he has already argued, are ideal; and neither the every-day man, the scientist, nor the philosopher is concerned with that whose nature it is to be unknown. This idealistic teaching should be restated in its application to specific realistic conceptions.

1. The physical universe may be regarded as made up of molecules and atoms. Now the molecule and atom are often conceived as extended things. “The atom,” to quote Fullerton, “is not directly perceivable by sense, but it is conceived as though it and its motions

²⁴ “The Grammar of Science,” Ch. VII., Sec. 3.

²⁵ “Matter and Motion,” quoted by Pearson, *op. cit.*, p. 245.

²⁶ W. C. D. Whetham, “The Recent Development of Physical Science,” 1904, p. 294.

were thus perceivable.”²⁷ The underlying character here is the spatialness, and the argument, already outlined, concerning concrete sense objects, shows equally that atoms and molecules, as spatial, are ideal. The modern conception of the atom as a complex of sub-atoms, centers of negative electricity in a sphere of positive electrification, reduce to the conceptions of spatial position, of motion, and of force.²⁸

2. A second view of the universe as ultimately physical conceives it as ether. By ether is meant a continuous and incompressible medium. But continuity is obviously spatial, and incompressibility is tangible. Moreover the ether is regarded either as (a) containing or as made up of moving particles—in other words, of spatial and tangible realities—or else as (b) pervaded by strain-forms. In either case the conception of ether includes that of motion—and motion is succession of positions, that is, a complex of spatial quality and temporal relation. In the whole conception there is, for the scientist, much difficulty in meeting the rival requirements of the groups of facts which ether is hypothesized to explain; but no description of the ether in other than terms of sensible quality and relation has ever been put forward.

3. We turn finally to the conception of the universe as a complex of different sorts of energy. Here, too, we find the physicists at odds among themselves. Energy is usually defined as capacity for work. Narrowly scrutinized, this statement means simply that energy is conceived as the further undefined cause of phenomena; and energy is thus reduced to a relation, causality, already claimed by the idealist as ideal. Many of those who conceive of reality as energy, seem, however, to mean by energy force. But force is defined in one of three ways: either as resistance, a quality directly revealed through muscular sensation; or as cause of motion; or as no more nor less than a mathematical ratio, a measure of motion—the force of *B* on *A* being defined as “the product of the mass of *A* into the acceleration of *A* due to the presence of *B*.”²⁹ But each one of these is a conception of ideal, not of non-ideal, reality. A mathematical relation is a mental conception; the resistance or stress which (to quote Montague) is immediately felt when a man places “his hand between a fixed spring and a body moving uniformly into collision with it,” is a sensible quality; and motion, as has appeared, is made up of spatial quality and of temporal relation.³⁰ All this is virtually admitted by many phys-

²⁷ “An Introduction to Philosophy,” p. 22. Cf. p. 66; and cf., also, “A System of Metaphysics,” pp. 143 ff.

²⁸ Cf. the two following paragraphs.

²⁹ Pearson, *op. cit.*, Ch. VIII., Sec. 9, p. 304.

³⁰ “Consciousness as Energy,” *op. cit.*, p. 125.

icists.³¹ "Energy is an ideal quantity," says Newcomb.³² "To gain an idea," Ostwald declares, "of the content of the concept of energy, we will start from the fact that we are able . . . through our will, to call forth occurrences in the external world."³³

From considerations such as these the idealist refuses the lure of the realist's pretension to the authority of science. For the hypothesized realities of the physical scientists are one and all reducible to the negligible unknown or else to a complex of sensible quality and relation. "Descend, then," says the idealist to the realist, "from hypothesis to fact. Do not talk about vortex-ring, and electron, and ether, and energy, until you have first discussed the terms to which these reduce: the sensible qualities and complexes—extensity, resistance, motion—and the relations—cause, multiplicity, oneness, and the rest. You can give no unchallenged account of these qualities and relations, except as distinctive ways of experiencing, that is, of being conscious."

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DISCUSSION

PROFESSOR DEWEY'S "ACTION OF CONSCIOUSNESS"

IN a footnote on page 69 of "Essays Philosophical and Psychological in Honor of William James," Professor Dewey says: "Of course on the theory I am interested in expounding, the so-called action of 'consciousness' means simply the organic releases in the way of behavior which are the conditions of awareness, and which also modify its content." If this is all that Professor Dewey means by the action of consciousness upon the existences which are the direct subject-matter of knowledge, there are several questions that I should like to have answered; for they have been bothering me ever since I have read the very interesting paper on "Reality as Practical."

First. How does such a theory bring about the evaporation of "the metaphysical puzzles regarding 'parallelism,' 'interaction,' 'automatism,' the relation of 'consciousness' to 'body'?" (p. 65, footnote). The organic releases in the way of behavior, we are told, are the conditions of awareness. Although elsewhere in this paper Professor Dewey defines awareness as attention, I presume that in

³¹ Cf. S. Newcomb, in the Baldwin "Dictionary of Philosophy": "Motion is change of place." And cf. Hobbes, "Concerning Body," Ch. VIII., XV.

³² "Dictionary of Philosophy."

³³ "Vorlesungen über Naturphilosophie," p. 153. I am not claiming Ostwald and Newcomb as idealists, but merely pointing out the idealistic implication of their statements.

this sentence he would mean to include consciousness in its inattentive forms also under awareness as conditioned by the organic releases. If these releases are the conditions of consciousness, they are thereby distinguished from consciousness; and they are at the same time asserted to be in a certain relation to consciousness: they are its conditions. Now the parallelist, the interactionist, the automatist, and the epiphenomenalist all agree in regarding the brain as in some sense the condition of consciousness. It is hard to see how the questions at issue between these different theorists are made to evaporate "when one ceases isolating the brain into a peculiar physical substrate of mind at large, and treats it simply as one portion of the body as the instrumentality of adaptive behavior,"—unless what is meant be that any question evaporates when it is ignored. It is true that if "the so-called action of consciousness means the organic releases in the way of behavior," there is no question as to the relation of the *action* of consciousness to other physical things. We have here just one physical thing in relation to other physical things. But if consciousness is conditioned by the "action of consciousness" (=organic releases in the way of behavior), there is a question as to the nature of this relation.

Second. In what sense can it be said that "a certain promoting, a certain carrying forward of the vital impulse, importing certain differences in things, is the aim of knowledge"? (p. 65). Knowledge is one kind of consciousness, presumably. Then, when we are told that the aim of knowledge is the promotion of vital impulse, are we expected to take this as meaning that the aim of the *organic releases* is to promote vital impulse? This is the most natural interpretation; for the aim of consciousness is naturally the aim of the *action* of consciousness. If this be the interpretation that we are expected to put upon this assertion, the instrumental theory of knowledge seems to be an instrumental theory of the brain; and if this be what it is, I suppose that all of us would subscribe to it. But after we have done so, there is still the further question, What is the aim of knowledge *as distinct from* and conditioned by these organic releases? This leads to the third question.

Third. If it is the organic releases that change the environment in the act of knowing, does knowing as distinct from these organic releases make any changes in the environment on its own account? If it does not, how does Professor Dewey's theory on this point differ *in principle* from that of the "program realists"? If it does, what further change does knowing make, and how is he to find out what changes are made? The method he seems to pursue is to set down the difference made by "that organic adaptation involved in all knowing" (p. 69) to the credit of knowing. Why to the credit of

knowing rather than to the credit of *that organic adaptation*, if these two things are distinct?

Fourth. If the action of consciousness is not the action of *consciousness* but that of the *organic releases* that condition consciousness, why may not things be known as they were *when* they brought about the organic discharges, as well as be known as they become *after* these discharges have in turn reacted upon these things? In other words, once distinguish between consciousness and organic releases, what justification have we for asserting that knowledge can be only of the *effects* of the conditions of knowledge? If knowledge be distinct from its conditions, should we not study it as we study anything else, not confining ourselves entirely to the functions of its conditions, but extending our view to take in any possible functions it may itself have?

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SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION¹

A MEETING was held on February 3 and 4, 1911, in the Psychological Laboratory of Columbia University. On the evening of February 3, a special session in memory of William James was held at the Faculty Club of Columbia University, and expressions of appreciation were given by Professors Miller, Angell, Thorndike, Jastrow, Calkins, and Dewey.

At a business meeting held on February 4, Professor R. S. Woodworth was elected chairman of the Branch, and Dr. H. L. Hollingworth was elected secretary and treasurer. On motion of Professor Dodge, the thanks of the Branch and especially of the visiting members of the Association were conveyed to the members from Columbia University for their hospitality.

The attendance was large, many members of the Association being present from a distance.

An abstract of the scientific proceedings follows.

A Report of Class Experiments on the Relation between Rate of Acquisition and Retention: NAOMI NORSWORTHY.

This experiment was undertaken by 83 students in educational psychology. The material used was a German-English vocabulary

¹The tardy appearance of this report is due to the failure of some contributors to the meeting to send abstracts of their papers promptly to the secretary.

of 1,200 words. The subjects studied 20 minutes a day for five days, learning in each study period at least 40 words and as many more as possible. This was repeated a second and third time. Two or three days after the third week's work, a test list of 50 words was given. These words were chosen from the number studied three times by every student. This test was repeated with a different list of words, after a month's time.

The number of words learned by the subjects ranged from 177 to 923, the median being 468. The half of the class which learned the greatest number of words remembered 70 per cent. at the first test and 73 per cent. at the second. The lower half of the class scored 52 per cent. and 47 per cent. at the same tests. The group which learned over 700 words remembered 76 per cent. and 78 per cent. when tested, while those who learned less than 300 words remembered only 46 per cent. and 36 per cent.

These experiments give evidence that those who memorize most quickly, and who therefore learn the greatest number of words in a given time, are also the ones who retain the largest proportion of what they have learned.

Feeling and Recall: E. N. HENDERSON.

In "trial-and-error learning" we tend to eliminate disagreeable reactions and to retain only the agreeable ones. Do we similarly tend to forget disagreeable experiences? To settle this it is necessary to distinguish experiences disagreeable when they occurred, but which it is not disagreeable to recall, from unpleasant memories. On the question whether we forget the disagreeable, experiment seems to offer a negative answer. Ten persons were experimented with. It was found that of experiences recalled at random from the past, 55.1 per cent. were originally agreeable, 11.8 per cent. indifferent, and 33.1 per cent. disagreeable. The average deviation of individual results from these percentages was small, being for agreeable experiences 6.7 per cent., for indifferent ones 4.6 per cent., and for disagreeable ones 4.7 per cent. It would seem that the proportion of disagreeable to agreeable experiences in the average life would be smaller than that of 33.1 per cent. to 55.1 per cent. In that event the experiment would indicate that we remember more of the disagreeable.

As to banishing disagreeable memories, it is likely that the tendency exists to some extent. However, every one knows that such ideas may rise insistently into consciousness. We endeavor to modify the situations with which they are related if these persist, or to interpret the situations to which they refer more satisfactorily, or, if no such solution is available, to get rid of the disagreeableness by ban-

ishing the memory. The last method is commonly only a last resort—otherwise consciousness, which exists to remedy such disagreeable conditions, would, by forgetting what it is to do, destroy its use.

The Joint Sense: W. P. PILLSBURY.

In 1902 the author published an article to show that Goldscheider's proof for the localization of the sense of movement in the joint was inadequate. Recently Spearman suggested that not sufficient positions or rates of movement had been used. Two students, Mr. Winter and Mr. Toney, repeated the earlier experiments, using four speeds and six or eight different positions of the elbow. The experiments confirmed the earlier results in every particular. Briefly summarized, the arguments against the joint sense are: (1) passing the induction current through the wrist or forearm increases the limen for movement as much as or more than passing the current through the elbow joint, at which the movement takes place; (2) no sense endings have been discovered on the synovial membrane or within the joint capsule (the organs usually referred to the joint surfaces are pacinian corpuscles in the fatty tissue near the joints); (3) introspection places the sensation in the forearm or even in the fingers. The seat of the sensations of movement is primarily in the muscles and tendons of the entire arm. These must be affected by any movement. Many subjects felt the fingers bend with flexion of the elbow. Skin and capsule and ligaments may contribute in some small degree, but are less sensitive.

Theories of Fatigue: EDWARD L. THORNDIKE.

Theories that interpret mental work and mental fatigue after the analogy of physical work and the diminution in energy caused by energy expended are radically unsound.

The differences within the same individual in different sorts of work and between different individuals in the same sort of work are not easily explainable on any mechanical theory, nor are the marked effects of interest and motive. Biological theories, whereby diminution in the work produced is a result not only of intrinsic changes in the process itself, but also of extrinsic changes or "by-products" and the negative effects of various deprivations, are more helpful.

No physical analogy is necessary in investigations of mental work and mental fatigue. Mental work is best defined as the behavior whereby certain products, such as books written, poems memorized, computations done, problems solved, and the like, are produced. Rest is best defined as the absence of such behavior. Mental fatigue is best defined as that diminution in ability to do mental work which rest can cure.

Application of the "Order of Merit" Method to Advertising: EDWARD K. STRONG, JR.

To test the reliability of the "Order of Merit" method when applied to advertising, a series of 50 Packer Tar Soap advertisements were secured. Twenty-five subjects sorted the advertisements in the order in which they would buy the soap. They arranged them into as many piles as they desired, but so arranged them that the difference in superiority of one pile over the next was just noticeable. If greater differences were noted, they were to leave as many gaps as they felt were needed to indicate this superiority. When this was finished they were asked to designate the pile, if there was such, which had no appeal at all. The highest pile was then arbitrarily assigned the value of 100, and the pile which the subject designated as having no appeal was assigned the value of zero. The remaining piles were assigned values proportionately.

The series was then arranged by Mr. E. A. Olds, Jr., of the Packer Manufacturing Company, and also by the Blackman-Ross Advertising Agency, who are now handling the company's advertising business. These two arrangements were based not on actual data but on the general experience of the firms.

Between the experimental order and either of the two orders of the advertising experts, there is a correlation of $+ .52$, while between the two experts there is a correlation of $+ .64$.

From the above figures we have an order of the superiority of these advertisements as to "pulling-power." We also have the amount of difference between any two advertisements.

These relationships are lower than that which has been obtained with other sets of advertisements. For example, a correlation of 100 has been obtained between the experimental order and the actual order based on the company's data with a set of lathe advertisements from the Bullard Machine Company.

Cephalic Indices in Relation to Intelligence: PAUL R. RADOSAVLJEVICH.

The author has made an extended anthropological-psychological investigation of the much-discussed question of the relation between cephalic indices and age, sex, race, social condition, heredity, and intelligence. The individuals who furnished the basis for this study were children and adults, of both sexes, educated and uneducated, European and American, aggregating 4,634 persons. All the cephalic indices studied—(1) length-breadth c.i.; (2) length-height c.i.; (3) breadth-height c.i.; (4) cephalic module; and (5) index for cephalic capacity—are based on three head measurements: (a) maximum length, (b) maximum breadth, (c) maximum height,

as defined by the Martin school. The classification of the indices is based on Martin and Vierordt. Martin's instrumentarium was used in making the measurements. In grading the intelligence of school pupils several methods were used; but the following results are based on only one of these methods, consisting of a synthesis of school marks and teachers' personal judgments, with special reference to ability in mathematics, physics, and grammar (the author believing with Professor Meumann that intelligence can not be measured as a whole, but only in some of its higher capacities). When the *very* bright and *very* dull pupils are alone compared, the following differences appear:

1. Compared with the very dull, the very bright are more or less brachycephalic, at all ages from 6 to 20 years, except at 6 and 7 years, at which the very bright pupils are mesocephalic. This difference between the two classes of pupils is not one of type but of degree.

2. Very bright pupils are much more chamecephalic than the very dull ones—again a difference not in type but in degree.

3. The breadth-height index and cephalic module are about the same in both classes of pupils.

4. The index of cephalic capacity (product of maximum length, breadth, and height) seems the best cephalometric criterion. The very best pupils are emmetrocephalic from 6 to 14, and encephalic from 15 to 20 years of age. The very dull pupils are inferior in all ages tested: they are nannocephalic from 6 to 11, and emmetrocephalic from 12 to 20 years of age.

5. All these statements are based on median values only. If we take into account the maximum and minimum values, we find many exceptional cases, showing that very dull pupils may excel all very bright pupils in every cephalic measurement, and *vice versa*.

The System of Habits and the System of Ideas: ROBERT MAC-DOUGALL.

The general character of mental development may be described as adaptation. It involves two factors, a form of response already established and an activity tending to modify it in conformity with a variation in the system of stimuli. The former is reflected in habit, which represents the elements of permanence in experience; the latter appears in attention and the systematic consciousness to which it leads, and reflects the margin of variability in experience. The terminus towards which the process of habituation moves is unconscious automatism. The system of ideas exists only in so far as the conditions of habit-forming fail within any given field. In the universe of experience the system of habits gives to ideal activity its

point of origin and direction; the system of ideas gives to habit a telic value, and maintains its commensurability with an enlarging environment. Without habit, experience would be an irrational chaos; without ideas, it would have no existence, since the term is predicated only when adaptation constitutes an ideal process determined by a specific aim and a sense of value. Normal development, therefore, is that process of change which leads towards a more complex synthesis of habit-modes and a widened ideal horizon; and the highest type of self is that in which a life of the most intense intellectual activity finds at once its basis and its object in the fullest organization of experience in significant reactions of the will.

Vicarious Functioning of Irrelevant Imagery: H. L. HOLLINGWORTH.

Observations of waking moments, the drowsy consciousness, and dream states, indicate that any sensory element—imaginal, perseverative, or immediately sensory—may serve to carry forward thought processes to which they are intrinsically unrelated. Association tracts, the activity of which may underlie the consciousness of relation, can only function as connecting lines between two end processes. But any sensory process available at the time may discharge into association tracts already functioning. This paper will appear entire in a later issue of this JOURNAL.)

Historical Note on the Psychology of Relations (1): R. S. WOODWORTH.

The "ideologists," flourishing in Paris at about the opening of the nineteenth century, while holding with Condillac that all thinking is sensing, recognized several classes of "sensations" or feelings. Thus Destutt de Tracy, perhaps the first, spoke of four kinds of sensations: sensations proper, memories, judgments or feelings of relation, and desires. His successor, Laromiguière, accepts practically the same division, and his arguments in favor of feelings of relation read very much like those of Ehrenfels in favor of Gestaltsqualitäten. The same can be said of the Scotchman, Thomas Brown, a contemporary of Laromiguière.

Interpretations of Imageless Thought (2): R. S. WOODWORTH.

Imageless thought, as a gross and approximate fact, seems to be accepted; but its interpretation is much in doubt. One interpretation (Miller) lays stress on bodily sensations which may accompany an otherwise unconscious process of thought. Another interpretation (Wundt) speaks of blended incipient images, unrecognized at the moment of "imageless" thought, but filing successively into clear consciousness, as words, etc., during the following moments. One interpretation (Titchener, Book) holds that, with familiarity, a thought may tend towards automatism, and thus become nearly

unconscious, or, in other words, "imageless." In opposition to these negative interpretations, the speaker offered the positive conception of "thought elements," according to which every relation or pattern apprehended was, dynamically, a unit of reaction, and, descriptively, a new event in consciousness, involving fresh content not otherwise to be experienced except in the apprehension of that particular relation or pattern.

A Plan for the Experimental and Observational Study of the Efficiencies of Normal, Subnormal, and Supernormal Individuals:
J. E. W. WALLIN.

The paper outlined a plan for the study of the problems of human efficiency recently adopted in the psycho-clinical laboratory of the New Jersey State Village for Epileptics. The scheme comprehends a survey of the *intellectual* efficiency of normal and abnormal individuals by clinical and experimental methods (the Binet-Simon tests; a set of serial group tests of the growth of various mental capacities, etc.), and by observational methods (school efficiency reports by teachers); a survey of the *motor-industrial* efficiency by the method of observation (industrial efficiency reports by officers, supervisors, and attendants); and a study of the *personal, social, and moral* capacities by the method of observation. It is expected that the results will supply data by means of which satisfactory schemes for the classification of defectives and diagnostic measuring scales of personal, intellectual, and industrial (motor) development may be constructed. A set of blanks were shown on which the results are recorded. All the forms in use in the institution are so made that they can be fastened together in book form, and thus supply a complete case history for each individual.

On the Question of Association Types: FREDERIC LYMAN WELLS.

An account of the tendency towards preservation of individual types in two records of the Kent-Rosanoff experiment with fourteen subjects, made over a year apart. The results show only a fair degree of fidelity to type in respect to the association time, but pronounced fidelity to type in respect to the tendency to give usual or infrequent responses (by the Kent-Rosanoff frequency tables), and also according to classification of the responses in respect to logical category. In both frequency and quality of the responses, the association test preserves a distinctness of individual type that compares favorably with many other psychological experiments. At the same time the results show that one can not ignore the possibility of personal fluctuations of considerable magnitude. In the presence of a demonstrable tendency to preserve type, extreme personal fluctuations are among the most important phases of the experiment.

The Prevention of Insanity: Hygiene of the Mind: A. J. ROSANOFF.

Insanity is very common and is apparently increasing at a rate which is about twice as great as the rate of increase of the general population.

Among the causes of insanity may be distinguished (1) those that are *essential*—heredity, alcoholism, syphilis, and head injuries—and (2) those that are merely *incidental* or *contributing*; these are innumerable, for almost any disturbing influence, no matter how slight, may determine an outbreak of insanity in the presence of one of the essential causes. The prevention of insanity consists largely in measures for combating the essential causes.

Experience has shown that the great mass of individuals, even if made fully aware of all dangers, will not practise preventive measures in any systematic manner. Dissemination of knowledge should be regarded as but a preliminary step which will make possible the application of large measures by society as a whole, and nothing less than that constitutes an effective system of mental hygiene.

Social measures which have been practised with any degree of success and which may, therefore, be recommended for more general adoption, are discussed at some length: sterilization of neurotics and defectives by the operations of vasectomy and salpingectomy, the control of retail liquor traffic by the Swedish system, the hospitalization of cases of syphilis during the period of greatest infectiousness, the employment of Ehrlich and Hata's "606," the application of prophylactic treatment according to Metchnikoff and Roux, etc.

The Use of the Selenium Cell for Measuring the Energy of Spectral Lights: JOHN B. WATSON.

Idealism, Realism and the Theory of Value: WILBUR M. URBAN.

This paper has been published in full in the *Philosophical Review*.
A Working Hypothesis for Inner Psychophysics: RAYMOND DODGE.

This paper has been published in full in the *Psychological Review*.
Some Results of the Binet Tests for the Study of Children: WILL S. MONROE.

Dream Analysis and Psychoanalysis: JOSEPH JASTROW.

A course of nine lectures by as many members of the Association was in progress at the time of this meeting; and two of these lectures, occurring on the days of the meeting, formed practically part of its program. These were:

Frailties of Imageless Thought: J. R. ANGELL.

The Standpoint and Scope of Social Psychology: MARY WHITON
 CALKINS. R. S. WOODWORTH,
 COLUMBIA UNIVERSITY. Secretary.

REVIEWS AND ABSTRACTS OF LITERATURE

Pragmatism and Its Critics. ADDISON WEBSTER MOORE. Chicago: The University of Chicago Press. 1910. Pp. xi + 283.

The general standpoint of the present volume is not far to seek. Written by one of the contributors to "Studies in Logical Theory," and dedicated to Professor Dewey, it will be welcomed as a further elucidation of the particular brand of pragmatism professed by the so-called "Chicago school." And it is perhaps not too commendatory to say that no other volume, representing this standpoint, of equal authority and importance has appeared since the publication of the manifesto of 1903—unless we except Professor Dewey's recent book "The Influence of Darwin on Philosophy and Other Essays."

The contents of the book fall into two parts: (1) a condensed statement of a course of lectures on the "Origin and Meaning of Pragmatism," delivered at the University of Chicago in the series of "Open Lectures" of the summer quarter of 1908; (2) seven articles on various phases of pragmatism which have been read before the various philosophical societies and later published in the *Philosophical Review*, the *Psychological Bulletin*, and this JOURNAL. In spite of the diversity of origin, the various chapters constantly keep in the foreground certain common problems which give unity to the volume as a whole: "(1) the historical background of the pragmatic movement; (2) the central rôle of the conception of evolution in the development of pragmatism; (3) the social, or, perhaps better, the situational character of consciousness and *a fortiori* of thinking."

This last point, so much neglected so far, is clearly and persistently set forth throughout the volume and constitutes one of its main claims to novelty. Herein is to be found the key to the refutation of the most persistent charge brought against pragmatism, viz., subjectivism or solipsism. When the pragmatist insists upon the mediating, reconstructive function of reflective thought, this thought is immediately identified by the critics with the analytic product of physiological and structural psychology, that is, the thought processes corresponding to the brain of some socially isolated individual. But such an identification reinstates at the very outset of the discussion the very group of distinctions which pragmatism has eliminated as inadequate. "The situation is the pragmatist's absolute." Consequently, if we would understand aright the nature and function of reflective thought, we must note how it arises and operates in total situations. Then we should discover, not that thought occurs in an individual mind, but that the individual mind and thought are functions only distinguished and distinguishable *inside* the situation. And the situation, it need hardly be added, is out and out objective, the very type of an independent world.

Not only is reflective thought thoroughly social in its function—first misunderstanding of pragmatism; but not all experience is reflective or rational. So that neither is the world *idea* nor is it *my* idea.

Just what, then, is the nature and function of thinking, interpreted in

this social rôle and operating in an experience which is not rational in the sense of being constituted through and through by the distinctions of reflective thought? In answering this question we shall at the same time explain what pragmatism is and how it arose. And this answer is unequivocal. All thinking is a mode or stage of conduct; and if it be objected that conduct is subordinate to the maintenance of values, still it must be admitted that conduct is creative or recreative of such values. In fact, the materials of thought are precisely these immediate, non-rationalized values which have fallen into conflict with one another; and it is just this conflict which thought attempts to mediate or resolve. Therefore, thought is not a special instinct alongside of others, one value among other values, but the instrument for getting control over instincts and values. But how about scientific thinking? Surely this is an illustration of a special instinct finding its own special satisfaction and value in scientific knowledge, apart from and without any reference to conduct. Quite the contrary. Not only is science always pursued by men with human instincts, needs, and interests, but scientific concepts and formulæ have no meaning except in their relation to an actual efficient control of experience.

To say that all thinking is a mode or stage of conduct is only another way of saying that thinking and purposing are inseparably related to one another. Thinking is the process of "making up our minds." And if we can not go so far as to say that every judgment is a decision, at least we may say that it is a factor involved in coming to a decision. Is not pragmatism, then, only a reaffirmation of the older voluntarism growing out of Kant's "*Critique of the Practical Reason*"? By no means, inasmuch as pragmatism not only denies the sharp distinction between the theoretical and the practical reason, but also insists that thought's powers are equal to its demands. On the denial of this latter point all the older forms of voluntarism go to pieces.

But if this close relation of reflective thinking to concrete acting be so simple and evident, how account for the rise and supremacy throughout a goodly part of history of absolutism, especially in its rationalistic form? In order to answer this question let us appeal to history and see just how the philosophical problem was posed among the Greeks. Did systematic, reflective thought arise as a pure intellectual demand for unity? Was it not rather motivated by a demand for social control over a world whose various aspects no longer offered a stable basis for social cooperation? To this demand for unity responses were numerous. Unfortunately scientific technique was not yet sufficiently developed to put these responses to a thorough test; and in the very plethora of suggestions the basis of efficient social cooperation, the organized social world, bade fair to evaporate. At this point arose the question of the procedure and worth of knowing in and for itself, with a view to determining more effectively a set of methods for resolving the conflict and establishing again a basis of cooperation.

Now right at this point was made the fatal mistake which prepared the way for the reign of absolutism. The logical problem was ranged alongside the problems of science and social life. "Thinking is now to

be regarded as a special process coordinate with other processes, as those of fire, water, etc. As such a special process it must have a locus, it must be a function of some assignable machinery. This seemed to be individual bodies or souls, logically it does not matter much which, as the Greek soul was but a more ethereal body. Now as soon as consciousness and thought are thus regarded as a function of the individual body or soul, the differences and disagreements of opinion formerly so puzzling at once seem explained." But how can these different processes of thinking going on in isolated individuals discover or construct a basis of agreement, of social cooperation? Only by appeal to a system of rational archetypes which each has beheld in a previous vision. Thus the basis of social cooperation and the methods of maintaining it are taken entirely out of social life; and thinking takes on the peculiar function of reproducing the celestial vision. Thus was absolute rationalism enthroned and the problem of metaphysics in the historical sense posed, viz., how to maintain a world of continuity and order in the face of an individualistic theory of human consciousness.

Certain fundamental difficulties have ever beset this doctrine. In the first place, the whole process and content of life is reduced to a departure from and a return to an experience of celestial contemplation. But why the departure? How are error and evil possible in a complete, unchanging reality? To hypostatize them or to reduce them to the unreal or the illusory is not to explain them. Again, suppose that knowledge, regarded as a symbolic reproduction of an immutable reality, be accounted true when it coincides with, is identical with, or *is* reality; how is truth possible where this identity is declared unattainable? Again, how can such uneliminable ingredients of social life as instinct, impulse, emotion, and volition, to guarantee which reflective thought was invoked, find a place in a complete, unchanging reality? The failure of both Mr. Bradley and Professor Royce to solve this problem shows how hopeless is any attempt of this kind.

Now it is precisely these difficulties to which absolutism gives rise which became the negative stimulus to the development of the pragmatic movement. The positive stimulus is to be found in the exacter determination of the concept of a self-supporting, self-controlling, and self-propelling experience, made possible by the Darwinian theory of mutability; a mutability which pragmatism has conceived as responsive to human will and purpose, not set by some absolute purpose. Meanwhile the technique of the actual operation of such teleological variation was gradually being worked out in different directions: (1) logically, in the recognition of the control value of the working hypothesis in science; (2) psychologically, in the detailed analysis (*a*) of the volitional, purposive character of ideas, (*b*) of their real social character. This latter doctrine, which develops into the conception of ideation as consisting in a connection of things, is traceable back to the Hegelian process of "othering," which insists that an idea is not a mere algebraic symbol, but that it is an *act* in which things pass into new interactions. But unfortunately the Hegelian logic lacks any principle to limit or control this "othering."

Such a principle pragmatism discovers in the fact that this othering is connected with our direct experience of the value of the sound or ache or whatever other content it be, and with our desire or purpose to retain and develop that value, or to get rid of it.

How, then, do ideas "work"? Ideas mark the initiation of new connections between things. Thinking makes an essential difference to, adds something to, the things thought of or about. Even a so-called past act, in becoming known, is altered in the sense that it takes on additional functions and consequences. Knowing *is* the beginning of new interactions and new consequences, it does not simply prepare the conditions for the beginning. Knowing is our desire, our will, our practical interests getting out of ambiguity and confusion into order and efficiency.

Thus the pragmatist agrees with the realist that the world is *not* my idea, but disagrees with him and shows his sympathy with the idealist in insisting that every phase of it may be mediated *through* ideas. But when the latter maintains that thought is absolute and constitutive of all experience, the pragmatist demurs, contending that it is always and only our finite, particular, specialized thought which is operative.

Such, in brief, is the argument of the course of lectures. To outline the content of the various papers which follow were superfluous, inasmuch as three of them are reprinted verbatim from this JOURNAL and the others are equally available in the journals above indicated.

This volume is not likely to silence all the objections to pragmatism nor to convert any one with whom the spirit is not already wrestling. Strenuous as is the attempt to present reflective thought as an instrument of control and mediation in a plastic, social world, still the problem of "responsibility to the objective" does not evaporate. About this old problem of the *objective* the entire pragmatic controversy turns. Convince one that the social situation is the absolute, and that objectivity is only a distinction arising within it and applicable to some of its contents—then that other pragmatic doctrine, the purposive nature and test of truth, follows easily enough. But has Professor Moore convinced us of his first and fundamental assumption?

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Totemism: An Analytical Study. A. A. GOLDENWEISER. Reprinted from *The Journal of American Folk-Lore*, April-June, 1910, Vol. XXIII., pp. 179-293.

Since 1887, when J. G. Frazer published his little monograph on totemism, no topic in the wide field of social anthropology has aroused greater speculation and controversy amongst English and continental scholars. American students, for the most part, have refrained from general discussions of the problem, contenting themselves with the humbler but possibly more useful task of amassing the data relating to totemism within our own aboriginal area. Mr. Goldenweiser's doctoral dissertation, which was written under the supervision of Professor Boas, of Columbia, subjects the numerous theories of totemism to rigid

analysis and criticism. It is a valuable piece of work, though one could wish that its publication might have been delayed long enough for the author to examine Frazer's four massive volumes on "Totemism and Exogamy" which appeared in the same year and represent his final views on this subject. As respects many points, however, the two writers are found in substantial, though unconscious, agreement.

Dr. Goldenweiser does not profess to set forth any body of new facts dealing with totemism. His work is an essay in scientific method designed to show that previous investigators have approached the problem without due consideration of the methodological procedure involved. For this purpose he institutes a detailed comparison of the Australian and British Columbia evidence with regard to the main features commonly considered symptomatic of totemism—in particular, an exogamous clan, a clan name derived from the totem, a religious or at least friendly attitude towards the totem, prohibitions or taboos against killing or eating the totem, a belief in descent from the totem. As far as the first two of these features are concerned, he discovers only a superficial resemblance which may have been the outcome of a quite different historical development in the two regions compared. Two other symptoms, namely, taboo and descent from the totem, he finds lacking in one of the areas, totemic taboos being unknown in British Columbia, and descent from the totem being absent from several, though not all, the Columbian tribes. This variability of the supposedly permanent factors of totemism leads him to the conclusion that they are rather independent ethnic units which may enter into different combinations with one another. He points out further that actual totemism as found in the two areas considered is not limited to the features or symptoms enumerated above, since in Australia magical rites and a belief in soul incarnation assume great importance in totemic matters, whilst in British Columbia there is a marked development of decorative art and the guardian spirit idea. From all this the author argues that "totemism" presents so many differing features as to lose all scientific value as a descriptive term applicable to world-wide phenomena. We may speak, with propriety, of the "totemic complex" in any given tribe or tribes; but totemism itself is only an abstract conception expressing a relation or mode of association.

Such is Dr. Goldenweiser's most important generalization. To a certain extent he has been anticipated by Professor Frazer, who; after an exhaustive *résumé* of the evidence, concludes that exogamy is not an integral part of totemism, and further that by no means all prohibitions relating to animals are to be reduced to totemic taboos. Totemism, to paraphrase Professor Frazer, is only one of the multitudinous forms around which savage superstitions have crystallized. On the other hand, the two writers are in marked disagreement as to the actual content of totemism, since Professor Frazer, after having surveyed in some sixteen hundred pages the geographical diffusion of totemic customs, is impressed with their general similarity. Though differences of detail occur, on the whole the resemblances are so many and so close as to deserve to be classed together under a common name. Hence he defines totemism, in the last

analysis, as "an intimate relation which is supposed to exist between a group of kindred people on the one side and a species of natural or artificial objects on the other side, which objects are called the totems of the human group."¹

We do not find that Dr. Goldenweiser, in his anxiety to prove that there is nothing of a specific character in totemic phenomena, gives proper weight to the evidence yielded by comparative studies in support of some such generalization as that which has been cited. His own definition, "Totemism is the tendency of definite social units to become associated with objects and symbols of emotional value" (p. 275), might be applied with equal validity to many other instances of the socialization of emotional values in primitive society. Thus the modern Todas have "socialized" their buffaloes and everything pertaining to the dairy; the nomadic Semites socialized the date-palm, the ancient Romans the cult of fire. It may be granted that from the psychological standpoint totemism refers to a process of socialization which doubtless works itself out somewhat differently in various communities and under varying situations. What has interested anthropological students, however, is the fact that over enormous regions of the savage world the outcome of this socializing process is a general similarity of the beliefs and customs commonly denominated totemic. Dr. Goldenweiser has been highly successful in pointing out what totemism is *not*—a task of no great difficulty; but there is such a thing as slurring over real and fundamental resemblances in order to emphasize minor points of dissimilarity and divergence.

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JOURNALS AND NEW BOOKS

MIND. April, 1911. *The Psychological Explanation of the Development of the Perception of External Objects* (III.) (*Reply to Professor Stout*) (pp. 161-180): H. W. B. JOSEPH. — A rejoinder to an earlier reply from Professor Stout. Objections are reasserted to certain fundamental positions in Professor Stout's psychology, maintaining that the removal of certain admitted confusions requires "a revision of his principles." *The Humanism of Protagoras* (pp. 181-196): F. C. S. SCHILLER. — Further discussion touching the question as to "how far the absolutism of Plato can be regarded as a successful reply to the relativism of the fifth century B.C." *The Ground of Appearances* (pp. 196-211): E. D. FAWCETT. — "The main contention is that Nature and conscious individuals are evolved in time out of what can be best likened—not to a Cosmic Reason or Will, etc., but—to Imagination." *Dualism, Parallelism and Infinitism* (pp. 212-234): ALFRED H. LLOYD. — The history of thought, it is said, reveals three ages, the age of dualism or medieval christendom, the age of parallelism or that of modern christendom since Bacon and Descartes,

¹ *Op. cit.*, IV., pp. 3-4.

and the beginning of a new age termed infinitism. The relation of the new age to the first two is considered. *The "Meaning" and "Test" of Truth* (235-242): J. W. SNELLMAN. - An examination of Mr. Bertrand Russell's criticisms of pragmatism contained in his "Philosophical Essays." *Discussions: Aristotle and the Philosophy of Evolution* (pp. 243-247): A. W. BENN. "Real Kinds" and "General Laws" (pp. 248-251): S. H. MELLONE. *Plato's Ideal Numbers* (pp. 252-255): R. PETRIE. *The Humanist Theory of Value* (pp. 256-257): OLIVER C. QUICK. *Feeling and Thought* (258-260): E. B. TITCHENER. *Critical Notes: Henry Jones, The Working Faith and the Social Reformer, and other Essays*: H. RASHDALL. Guy Montrose Whipple, *Manual of Mental and Physical Tests*: W. H. WINCH. Ernst Untermann, *Die Logischen Mängel des engeren Marxismus*: S. J. CHAPMAN. Henriette Roland-Holst, *Josef Dietzgens Philosophie*: S. J. CHAPMAN. *New Books. Philosophical Periodicals. Note. Mind Association.*

THE JOURNAL OF ABNORMAL PSYCHOLOGY. April-May, 1911. *Psychotherapy and Reeducation* (pp. 1-10): JOHN E. DONLEY. - Reeducation is the *summum bonum* of psychotherapy. But a certain enthusiastic cooperation on the patient's part is necessary to successful treatment. *Some Instances of the Influence of Dreams on Waking Life* (pp. 11-18): ERNEST JONES. - Several interesting clinical cases in which dreams have directed the patient's conduct; all three types of influence, conscious, half-conscious, and unconscious, are found. *The Detection of a Case of Simulation of Insanity by Means of Association Tests* (pp. 19-32): EDWIN W. KATZEN-ELLENBOGEN. - A highwayman gives himself away by conspicuous retardation and modification and selection of associated words. *A Contribution to the Psychopathology of Hysteria* (pp. 33-65): ISADOR H. CORIAT. - A history, psychoanalysis, association tests, dream analysis, record of automatism, and an interpretation of a hysterical young woman. The investigator concludes that the case shows the utility of Freud's hypothesis but does not demonstrate its complete accuracy. Other than sexual factors are at work in hysteria. Abstracts: George H. Savage, *The Harveian Oration on Experimental Psychology and Hypnotism*: H. J. WESSEL. Ed. Claparède and W. Beade, *Experimental Researches upon Some Elementary Psychic Processes in Hypnosis*: I. H. CORIAT. Daniel Starch, *Mental Processes and Concomitant Galvanometric Changes*: EDW. B. HOLT. Tom A. Williams, *The Traumatic Neurosis*: TOM A. WILLIAMS. Reviews: J. W. Courtney, George L. Walton, *Those Nerves*: ERNEST JONES. *Jahrbuch für Psychoanalytische und Psychopathologische Forschungen, Vol. II.*

Kessler, Kurt. Rudolf Euckens Werk. Bunzlau: G. Kreuschmer. 1911. Pp. xii + 135.

Meredith, James Creed. Kant's Critique of Æsthetic Judgment. Translated with seven introductory essays, notes, and an analytical index. Oxford: The Clarendon Press. 1911. Pp. clxx + 333. 10s. 6d.

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NOTES AND NEWS

FROM the West London Ethical Society we have received a little book containing "Two Responsive Services in the Form and Spirit of the Litany and the Ten Commandments," prepared by Dr. Stanton Coit. The very great value of responsive services in forming moral and religious habits and the conviction that "the Litany, in its original wording, is the most universally humane, tender, loving, and purifying document ever written," and that the Jewish Decalogue "is the most majestic, strenuous and strengthening utterance that ever emanated from a suffering and struggling nation's heart," have led Dr. Coit to prepare a modernized version of these great documents in the hope that those who can no longer use the old forms with sincerity may find no similar impediment in the use of the new. As an example of the attempt to modernize the Litany, we quote the following passage from Dr. Coit's commentary entitled "The Litany and Modern Life":

As one instance of my own attempt to appropriate to the needs of our day the form and spirit of the Litany, compare the adaptation here given with that portion of the original where it says—

"That it may please thee to preserve all that travel by land or by water, all women labouring of child, all sick persons and young children, and to show thy pity upon all prisoners and captives,

"We beseech thee to hear us, good Lord."

We notice, in the first place, that the specific reference to the dangers of travel by land and by water harks back to a far past age. There is no longer any special danger to travellers from thieves and murderers; and it is maintained by statisticians that a man is as safe from accident to-day, when traveling by rail or by steamship, as when lying in his own bed. There are exceptional dangers, to be sure, in motoring and aeroplaning, but there is no necessity, as yet, constraining us to such enterprises. The phrase, accordingly, "to preserve all that travel by land or by water" may very well fall away.

Not only are the petitions of the Litany modified in the spirit of the quoted passage, but the responsive supplication which in the Church's form recurs as a refrain, "We beseech thee to hear us, good Lord," is modernized into such phrases as "Is our high task and privilege." We do not doubt the sincerity of purpose of the book, nor question for one moment the value for moral habits of public services in which all mention of God and the supernatural have been eliminated. But we do very much question the value of modernizing ancient documents like the Litany and the Ten Commandments. One who knows that his people for generations have been accustomed to pray,

That it may please thee to give us true repentance; to forgive us all our sins, negligences, and ignorances; and to endue us with the grace of thy Holy Spirit to amend our lives according to thy holy Word:

We beseech thee to hear us, good Lord,

must feel that there is a descent when for such a petition is substituted:

That we may feel true repentance; forgive one another's sins, negligences and ignorances; and be endued with power to amend our lives according to the principles of unselfish love,

Is the deep yearning of our hearts.

THE Somerset Archeological and Natural History Society has resumed work on the Meare Lake village, under the control of Messrs. A. Bulleid and H. St. George Gray. Besides various late-Celtic relics similar to those already discovered, Mound 7 has produced a class of objects hitherto not found elsewhere, including a number of worked and polished shoulder-bones of animals, the blade-bones being in some cases ornamented in the dot-and-circle pattern. Kimmeridge shale is rather plentiful for a substance imported from Dorset. Little bronze has so far been found, the objects including finger-rings, an awl, and a rivet. Some much-corroded iron objects, such as a knife and chisel, have been unearthed. Human remains are scarce, only two pieces of skull-bone having been found. Pottery is plentiful, and of a type differing in design from that found at the Glastonbury Lake village. As is evident from the number of bones of various kinds, the people occupying this site lived largely on meat. They possessed an ox and horse of a small type, a large variety of dog, and remains of the beaver and otter have been discovered. The relics which have been up to this time found are open to inspection at a temporary museum on the site, whence later on they will be removed to the County Museum at Taunton Castle.—*Nature*.

IN the July issue of *Man*, Messrs. N. F. Robarts and H. C. Collyer continue their report on the excavation of the British camp at Wallington. The numerous loose unbroken flints found on the inner side of the ditch seem to have been used as missiles, and round Tertiary pebbles were employed as sling-stones. A large collection of implements used in the preparation of food was made, the most common, probably because they were the most indestructible, being saddle-back mealing stones, made of the Lower Greensand sandstone. Many tiles, resembling those from the Swiss Lake dwellings, were discovered. Though there were many flakes and cores, stone implements were scanty in number. A broken axe of diorite indicates foreign commerce. Further exploration of the large remaining portion of the ditch will doubtless provide many other similar articles, but the specimens already unearthed are sufficient to give a tolerably clear idea of the civilization, arts, and industries of the inhabitants of this Surrey town in the first or second century B.C.—*Nature*.

THE third edition of the "Grammar of Science," by Karl Pearson, is divided into two volumes the first of which has appeared under the title, "Part I.—Physical." There are two new chapters, one on Causation by Professor Pearson and another on Modern Physical Ideas by Professor Cunningham. The second volume dealing with living forms is promised shortly. The work is published by Macmillan.

PROFESSOR KARL PEARSON, F.R.S., has been appointed to be the first occupant of the chair of eugenics in the University of London, established by the legacy bequeathed for that purpose by the late Sir Francis Galton.

DR. JOHN BEDDOE, F.R.S., noted for his anthropological observations on the physical characters of living races, died on July 19, at Bradford-on-Avon.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE EXISTENTIAL PROPOSITION¹

AS we discuss with our fellow philosophers the meaning of the word "to exist" or as we read recent writings by members of different philosophical parties in the hope of discovering some general agreement regarding the usage of this word, we are astonished at the amount of disagreement and even of confusion. Not only do we disagree in our theory of reality, but we do not agree even as to what we mean by the word "reality." Now, is this difference in usage a matter only of words, due chiefly to imperfect logical analysis; or is it the valid result of conflicting solutions of the same philosophical problems? The more I have studied the question, the more have I come to believe that the difficulty is verbal and not genuinely metaphysical, and that some established usage of the word "to exist" would help philosophers to cooperate to a greater extent than they now do.

How ought we, then, to define the word "to exist"? I reply: With the minimum of ontological assumption; for the definition of existence ought not itself to be an ontology. How can we define it with the minimum of ontological assumption? By defining our notion, if possible, in terms only of formal logic. True, logic itself may be an ontology; still it is the minimum, and moreover is unavoidable. The problem of this paper is accordingly: Can existence be defined in terms only of formal logic? To solve this problem we shall try to show that some prominent specific uses of the word "existence" in daily life and in recent philosophy can be brought under a generic definition which employs only logical notions.

Let us begin with the question: What is meant by the philosophical mathematician when he informs us that mathematics is a non-existential science? Mr. Russell gives us a clear answer to this question. The propositions of mathematics are of the form " p im-

¹ A paper read at the meeting of the American Philosophical Association, Princeton, December 29, 1910.

plies q'' where we do not know whether or not p and q are true, but only that if p is true, q is true. This characteristic is the basis for calling the science non-existential. All of which implies that the propositions of an existential science are of a form where either q is asserted or both p and q are asserted. Applied mathematics is of the latter type; for here, accepting some given, empirically ascertained information and assuming certain mathematical theorems to be true, we deduce their consequences. In short, giving p a value that we accept as true, we deduce q . On the other hand, the atomic theory in chemistry is of the former type, for here we know certain experimentally ascertained chemical laws to be true and seek a premise, or explanation, from which they can be deduced. In short, we know q to be true, we discover that p implies q , and therefore assert p as true. Thus in both cases p is asserted, and the propositions of our science are of the form " p , therefore q ." Thus the mark that differentiates an existential science from a non-existential science is that in the existential science all propositions are asserted. Now let us adopt tentatively this account of the nature of an existential science; for, if it is accurate, we can by its means define existence in terms of formal logic only.

Our account suggests that there are two types of existential science, which must now be described at greater length. In the first we have the application of science, and our clearest examples are taken from applied mathematics. In applied mathematics we take rational dynamics as true, then by giving certain values to our terms we deduce the consequences; or else in addition to rational dynamics we use as premises some empirically ascertained laws and then deduce q . For example, getting from experience the coefficient of friction between wood and iron, we can deduce the circumstances in a given case when slipping will be just about to take place. Or again, though no man has constructed a 100,000-ton ship, the naval architect can predict with confidence the behavior of such a ship of a given plan. His assumptions will be taken in part from pure mathematics and in part from empirically ascertained information. Perhaps as simple an illustration as any is that our theoretical mechanics assumes the Euclidean geometry to be true, and that on this and further assumptions it often asserts what has never been otherwise tested. In short, p is true, therefore q is true.

In the second type existential theory is markedly different; for in it we do not proceed by assuming certain premises and therefrom deducing q ; rather, we have given us q , and seek a system of premises p from which q can be deduced. This process we shall call *explanation*, which may then be defined as any consistent system of

propositions from which given propositions can be deduced. This definition reveals one of the difficulties with which the mind of man has to contend, a difficulty so often illustrated in the history of science. As far as logic is concerned, q does not imply the truth of p from which q follows. Thus the Ptolemaic astronomy, the corpuscular theory of light, and many another outgrown theory served admirably as an explanation of some system of propositions q ; but when more and more propositions were added to q , the old theory had to be altered and sometimes had to be rejected, when another theory p^2 could do the explaining either more simply or more completely. Scientific method has of course sought to protect us against this logical shortcoming by demanding that we shall put our new explanations to additional tests; for we are usually required to deduce some further propositions q^2 or q^3 from our theory and then test the truth of these, in short, to verify in part our explanation. Yet an absolutely complete verification is impossible, and therefore all our explanations claim our assent ultimately because a body of accredited information q can be deduced from them. That is, q is true; therefore p , which implies q , may also be true. A good illustration of this type of existential proposition is Weismann's theory of germinal selection. Nobody knows whether it is true or not, that is, whether germinal selection takes place or not, and the only ground Weismann has for asserting it is his conviction that the animal and plant variations found in nature can be deduced from his theory.

Few besides philosophers, to whom it is trite information, realize to what a great extent not only the existent world of science but even that of daily popular life is believed in and accepted as a matter of course, simply and solely because it is just such an explanation of accredited fact and of our hourly experience. This belief includes not merely some new scientific hypothesis, such as the corpuscular theory of matter, but countless commonplace propositions, such as that the earth is a sphere and moves on its axis. Therefore, if this account of the nature of existential science is accurate, the world, the belief in whose existence the people of all civilized lands have in common, may be described simply as our best results in the attempt to explain the experiences of daily life. This explanation in the main has been tested so thoroughly and by so many people that we accept it as unquestionably true. None the less, we know it is subject to change, for it has been greatly changed in the past, and many besides pragmatists admit that it will ever be in course of growth and modification.

These two types of existential proposition are familiar to the student of the history of philosophy. In the former we have the ideal of the dogmatic rationalist, and in the latter the ideal of the

critical empiricist. If only we could discover a system of true and fundamental propositions p , from which all other true propositions can be deduced, we might with Spinoza view reality *sub specie æternitatis*. To-day we may differ, as men in other ages have differed, as to whether or not reality is fundamentally logical. To those who believe it is alogical, of course the ideal of Spinoza is not only unattainable by the finite mind, but is essentially false and impossible. However, this question is beside the issue of the present paper. All men give science and common sense some place, and Spinoza's ideal attained would be but the carrying out to completion of what all men, learned and unlearned alike, attempt to do almost every moment of their daily life, namely, to foresee the future. We differ perhaps regarding the size of such an ideal fundamental system from which all other true propositions can be deduced. Some of the old dogmatists talked as though such a system would not be unmanageably large; whereas others held that nothing less than an infinitude of propositions could satisfy the conditions of the problem, and that we must therefore be content with a general science which will never give us the detail of the existent world, but only its broadest outlines. Thus in applying mathematics we have to substitute values for the variables and constants of our formulæ, since no mathematics could possibly predict for us the values we may happen to need on this or that occasion in future history. This must be left for the occasion itself to supply. So, too, science everywhere strives to find the continuous in nature, though no part of nature ever lacks the discontinuous. No two acorns are alike, and probably no two atoms of hydrogen are alike; and if the ether is made up of particles, probably no two are alike. Thus all our formulæ apply to classes, but not to the individual members as such. However all of this may be, our definition of reality would remain the same, it would be that ideal set of propositions p , finite or infinite, from which all other true propositions q would follow.

In the second type we have, as was said, the ideal of the empiricist. Here the existential proposition is of the form " q being true, p is true, since it implies q "; and we may add, all existential propositions are thus instances of induction, that is, are in part guesses. All existential systems of this type assert certain propositions as true. Why they are true, or what is the nature of truth, is not our present problem. Enough that in such systems these propositions are asserted; and that as the presuppositions of such systems they are data. These asserted propositions constitute for us in daily life that body of accredited fact which every man accepts on penalty of being regarded as insane if he does not.

Of course this body of accredited fact proves at once upon analy-

sis to be in itself an existential system, but an existential system so old and so thoroughly tested that all men accept it. However, as an existential system it is an induction, and it too rests upon some more nearly ultimate group of propositions q . This q in turn may prove likewise to be an existential system resting on a still more nearly ultimate q as presupposition. So the question arises: Are there ultimate propositions q that are self-evidently true, or at any rate are known infallibly to be true, and that as such form an ultimate presupposition on which this or that existential system rests? This question I have answered in the affirmative in papers read before this Association at earlier meetings,² but I believe and hope that in the present problem we can leave the question quite an open one. My only contention is that all existential propositions of this type have presuppositions which are asserted; and I call such an assertion a datum.

A new question now arises: Are not these two types of existential science, the deductive and the inductive, compatible? Indeed, will they not in the end give us the same system of reality? The affirmative answer would be given, if I mistake not, by all or surely almost all philosophers and scientists. How far one method is to be preferred to the other, or which must come first, deduction or induction, and similar questions are for the present discussion irrelevant. It is, however, of importance to define the term reality as that term will be used in the one or the other type of existential science. Both mean by reality p , the sufficient ground of all true propositions q . For the one p is datum and q is deduced, whereas for the other q is datum and p is induced; but in either case q is true, and the problem of reality is to discover its sufficient ground. Reality, therefore, is the sufficient ground of all true propositions,³ that is, it is a complete, self-consistent system from which any true proposition q or

²As an extreme empiricist I hold that there is only one ultimate test of truth, namely, reference to fact. By fact I mean perceived truth. Thus q is ultimately fact; and I should express the two types of existential proposition preferably as follows: First, given a theory that we believe to be true, we deduce its consequences, which must agree with fact; or, second, given facts, we invent an hypothesis which will explain these facts and then assert the hypothesis as true theory.

³For reasons given in a preceding note, I find this statement awkward. As an empiricist I should prefer to say: Reality is the sufficient ground of all fact, or perceived truth. I believe this view quite agrees with that of Hume. If the causal relation is reducible to that of implication or at least is a type of implication, another way (Hume's way) of putting the foregoing definition is: Reality is the cause of the perceived. *E. g.*, I hear a noise and say a trolley car is passing in a neighboring street. In thus asserting the existence of this event I am only asserting the cause of the perceived event. In short, the notion of existence presupposes always the notion of cause.

datum q can be deduced. Is it also the necessary ground? That is, is there only one system of reality? I know of no purely logical answer to this question. I admit that we have, or seem to have, in our methodologies a further but non-logical postulate, to wit, as q becomes more and more extensive and complex, there can be only one system p that can imply it; for it is usually assumed that there is but one true existential system. But is this not an ontological assumption, and one of the sort our definition should avoid? Indeed, I believe, this very postulate is a prime issue between philosophers to-day; for did we make the views of Mach and Pearson thoroughly explicit, we should, if I mistake not, find this to be a chief difference of opinion between them and their opponents. Therefore, I repeat, our definition of existence ought not to imply that there is only one p that can imply q . It ought to leave open the question whether or not the real is unique.

Before proceeding further we must examine briefly certain assumptions that we have implicitly made in our definition. In the first place, truth is not to be confused with existence, for many propositions are true which are not existential. This seems to me to shut out one historic definition, namely, that existence is an absolute position; for how is truth any less an absolute position than is existence? In the second place existence should be kept distinct from mere fact, or, as it is usually called, the content of immediate apprehension. This is not done by some philosophers, for they argue that existence is immediately apprehended and that it is something ultimate and indefinable. Let us grant that all existence is fact, that in fact we have our only immediate acquaintance with existence and that therefore its very nature is here uniquely revealed to us. Will this admission on our part annul our definition? I believe not, and for the following reasons: First, the business of the existential judgment is not to reveal the nature of existence, but to tell us what exists; and as Hume told us long ago, we never learn from observation alone what exists. Indeed, all will admit that most existential judgments are inductions, that the world, or the existent, is a far vaster system than man can apprehend, and that we assert the existence, for example, of Cæsar and of the center of the earth not because we observe them but because we place them in this vaster system.⁴ Secondly, even though we learn from immediate experience alone what it is to exist, immediate experience is not a complete method of discovering existence. Postulates of some sort must help out observa-

⁴ Merely to see an object would not be to assert its existence, but *to see it and to react* to it would be. In other words, were we seeking a definition in terms of psychology, we should define an existent as that to which we react, or again as that which guides conduct.

tion. In other words, what we are endeavoring to define is the existential proposition and that larger system which it implies; and there is no reason to believe that either is indefinable or that either is revealed in immediate experience.

To return to our main line of thought, let us ask the all-important question: Can the various species of existential system be brought within this generic type aforegiven? When we use the word "exist" in daily life, in science, or in philosophy, do we mean what our definition indicates, or at least do we mean something that can come under our definition as a species under a genus? The answer to this question is of course the true test of our definition, and until this test has been successfully passed all the foregoing is but the exposition of a tentative definition. In this test our business is not either to prove or to refute anybody's conception of reality, but to be as non-partisan as we can. The only criticism that we are called upon to make is the one already pointed out, no definition of reality ought itself to be an ontology; for our definition of reality should be as catholic as logic permits and surely so, as long as men have radical differences of conviction as to what exists.

The first use of the word "to exist" which we shall consider is that involved in the common-sense empiricism of daily life. Consider the following propositions: "The desk at which I am writing was my father's." "It rained here a week ago." "Our steamer will arrive to-morrow." "You will find him in the next room." "If you use this recipe, you can not fail." "Heat makes wax melt." "Lead is heavier than wood." "Yellow is brighter than blue." "Nine times nine is eighty-one." "David Copperfield lived in London." "Some of the Lilliputians tied him to the ground with threads."

Which are existential and which are not, and how are we to tell? Some of them are clearly existential, and lend themselves to no other interpretation. Others, such as "Yellow is brighter than blue," "Heat makes wax melt," might be true though at the moment no yellow or heat existed. However, when we pass such judgments as these last, we usually believe that such things either do exist or will exist, or at least have existed; for otherwise our assertion would often be meaningless. Nevertheless, we do not assert existence explicitly, just because it is probably superfluous or irrelevant to the information we wish to convey. These propositions might be conceivably true if heat or yellow never existed. It may then be said that particularity makes a proposition existential. As we are using the word existential I do not believe that this expresses the whole truth. Are the propositions, "David Copperfield lived in London," or "Some Lilliputians tied him," existential? No, and

why not? Because they are fiction and because they are not lies? If they were lies they would be existential; but as a correct account of fiction, or even as false, if they are meant as an account of fiction, they are not existential. This shows that some particular propositions are not existential.

Yet it is true that the particular is more explicitly existential than is the universal; because the particular usually *makes an explicit reference to fact*. When a man tells us, "He is my brother," the word "he" is a *direct reference*⁵ to something that makes it impossible to interpret his words as fiction. If existentially the man has no brother, the man lies; and if the object indicated by the word "he" is not that brother the man lies; and all of this is true because of the reference to fact. He is interpreting fact and he indicates *what* fact. The same is equally evident in "I have a brother," "My father has a brother," "It rained *here* a week ago," "You will find *him* in the *next* room," "The clock does not go." All of these judgments *point* to what they are interpreting. Precisely as when we give the longitude of a place we leave its location quite indeterminate, unless we include east or west of such and such a fixed place; so also in our propositions, if we in no way indicate concerning what facts we are passing judgments, our judgments may be fiction or non-existential. Now singular and particular judgments usually do in some way, either by our gesture, the position of our bodies, or by our surroundings, or by the preceding discourse, make themselves determinate by a reference to fact. In short, they have an additional element that is of their very essence, though often non-verbal—namely, they point out to what they refer. If we omit from our interpretation of these judgments this "pointing out," we omit that which makes them existential.

We may then express the essence of an existential judgment thus: "This very statement is an interpretation of, or is true of, that object or objects." "That object" is common to our perception or thought. "That object" will indicate unambiguously to you of what I am talking, and will be your chief clue in ascertaining whether or not what I say is true or false. "That object" is our logical starting-point.⁶

Is this not our tentative existential proposition of the second type? I believe so. "That object" is the *q*, the datum. Our judgment interpreting "that object" or holding of that object is the *p*

⁵ This "pointing out" or "reference" to be found in existential judgments was first called to my attention by my friend, Professor Edwin B. Holt.

⁶ This comes out very clearly in instances of illusion where we are quickly corrected. "That is a man standing in my room; why no, it is my overcoat." "That house is on fire; no, it is the setting sun shining on a window."

which implies or presupposes q . p must conform to q or our existential proposition is false, for p implies precisely that q , and our only warrant for asserting p is that it does thus imply "that object." "He is my brother" indicates q . You may examine the fact q as you will, if you find aught that is inconsistent with my statement "He is my brother," I have logically admitted from the start that my proposition is false. If its truth thus depends upon its implying q , its being consistent with q , its being false unless q is such and such, then its very structure is p implies q ; and we may restate it, "He is my brother implies that object."

On the other hand, we have admitted that when we say, "Yellow is brighter than blue," "Heat melts wax," "Lead is heavier than wood," "Nine times nine is eighty-one," we do usually pass an implicit existential judgment. We mean more than if x is an a , x is a b , for we mean that there are cases of x . Not merely can heat melt wax, heat does melt wax sometimes. Not merely would yellow be brighter than blue if there were such terms, but there are such terms. In short, these propositions do usually refer to fact, but they do not clearly point out here and now the facts they presuppose. However, since these propositions do imply that there are facts with which they are consistent, we can logically make inferences from them regarding what is true to fact. Thus to bring out explicitly the existential import of these judgments we should word them somewhat as follows: "Heat melts wax, implies that if you do thus and thus you will see wax become fluid"; "Lead is heavier than wood, implies if you put lead in water it will sink and if you put wood in water it will float." In short, p implies q and p is true, therefore q is true; and thus it is an existential proposition of the first type.

You ask why all of this is not expressed explicitly in the words of our judgments. Clearly because to do so is superfluous. Our present surroundings, the preceding events of our lives, the earlier part of our conversation, all give our words their meaning. Apart from such a context nine-tenths of our judgments would be unintelligible. To bring this out in our work of logical analysis is of utmost importance, to make it explicit in our daily conversation would be entirely needless and most wearisome.

All of this may perhaps be made clearer and more convincing if we turn our attention from the examples and think of the situation in which man stands as he is called upon to pass judgment as to what exists and what does not. Such judgments are usually perceptual adaptations to environment. We face something, a closed door, to which we react. Without further knowledge on our part, no inspection of the object itself would reveal what we should do or

even that we should do anything. We react by lifting a latch and the door opens. This intelligent act formulated as a judgment would be, if I lift the latch the door will open. p implies q , p is true, therefore q is true. As I fulfil the conditions, that is, make p true, I expect to find q true, I expect to see the door open.

Let us take another instance. I hear a noise and I interpret it "A train is passing." My judgment is my explanation of the noise. The noise q is given; p , if true, would cause me to expect such a noise. In terms of our symbols, q is true, p implies q , therefore p is true. Take another instance, the maiden's thought, "He came to see me yesterday." Evidently this judgment affirms existence. Let us assume that the thought in purely verbal form entered her mind without any apprehension of evidence of its truth, such as the sight of a visiting card, or a mental image of the suitor, or an awareness of what suggested the thought. In short, let us assume the words and nothing more, a thought and a purely verbal one. For this judgment to have any meaning, it must have some reference or connection or implication, it can not hang in mid-air. To discover this reference or implication we may as psychologists have to seek it in purely neural connections and adjustments; or it may make itself evident shortly in the thought context, in the feelings, or in the motor reactions. In either case it may be something which demands an explanation or creates a need for one, a given q whose explanation p is sought. Thus the thought may be the answer of an implicit question, "Why did I get no letter?" On the other hand, we may find that the original thought itself is functioning as though it were a logical starting-point, it leads onward, it is true, and implies, p is true, p implies q , and therefore q is true. Thus the feeling tone accompanying the thought may be implicitly the conclusion, "He is fond of me"; or this q may, as was said, be merely the neural adjustment that is to determine conduct; or again it may be some immediate act or further thought that in turn leads to an act.

Finally, let us take the illusion, "Yonder is a fire!" There is here clearly a reference; and there is here either an interpretation of that which is referred to, or an expectation of what is to come. In the one case, we have p an explanation of the present q ; and in the other we have the same p implying a future q^2 or q^3 . In a moment a non- q turns up, a new judgment is passed, "It was the sun shining on a window." The former existential judgment is disproved and a new judgment takes its place.

So I believe we shall be able without violence to interpret every case of existential judgment in daily life. Either we meet with some fact or situation calling for an interpretation and often a corresponding reaction; or we are making plans, building systems of judg-

ments, or in some similar way inferring events of the past, the absent things of to-day, or the life the future has in store. In the former case, *q* stands before us unexplained, and our problem is, What is the *p* which implies precisely this *q*? In the latter case we are drawing on our present stock of information *p* and are inferring the *q* it seems to imply. All of this is simply saying with Hume that all existential judgments involve the causal postulate, and adding thereto that the causal relation itself is but a specific case of the relation of implication. One event or thing implies another, and when we add to this that either is logically given us, we have asserted existence.

Now the same holds true of the existential proposition in science. In asserting existence the scientist is maintaining that certain established facts and theories imply a *q*; or he has given him a *q* in the shape of fact or established theory and he is seeking its explanation. This is much more easily shown to be true than was the similar statement regarding our existential judgments in daily life. In the first place, take the Copernican theory of the solar system. To-day it is unquestionably asserted by all cultured peoples; yet no man has literally seen the planets go around the sun or the earth revolve on its axis. Evidently this theory is asserted for but two reasons: it explains what we see and it enables us to predict what we shall see. The same things may in turn be said of the doctrine of animal and plant evolution, of the geological theories regarding the origin of the earth's strata and of the present topography of its surface, of the atomic theory in chemistry, of the undulatory theory of light, of the kinetic theory of gases, and so on indefinitely. In short, the business of existential science is to explain and to predict the observable. Should it be objected that the business of existential science is rather to describe to us the unobserved and unobservable universe of the present, the past, and the future, we should reply, even granting this to be so, still if we analyze any instance we will of the unobserved existent, we shall find that it is inferred by science and inferred for only two reasons—either it explains what we do observe or believe, or it enables us to predict what we shall observe, or again it does both. That is, the world of science, as well as the world of the most ignorant races of men, is an explanation of the observed or the asserted.⁷ It is a *p* which implies a given *q* and is asserted because it does so imply.

An excellent test of this analysis of the existential judgment will be to ascertain whether or not we can hold it without contradicting

⁷ The word "the asserted" is added because there may very well be cases where the existent is the asserted explanation not only of traditional convictions and beliefs but also of the outright delusions of the superstitious and the insane.

on the one hand the views of Berkeley, Ernst Mach, and Carl Pearson, and on the other those of their opponents. For brevity's sake let us confine our first test to Carl Pearson's familiar doctrine. Pearson tells us that the sciences are merely shorthand devices for describing our sense impressions. Their business is not to tell us what exists, for the only criterion of existence is perceivability. What can not be perceived does not exist, but this does not hinder science describing the perceivable in terms of symbols or fictions, or by any other convenient device.

In the first place I do not believe that Pearson truly means to use the word "describe" here. An atomic theory can not be a description of a perceivable chemical reaction, or an ether theory a description of perceivable light. A description of the perceivable would be a verbal instrument by means of which we arouse in some one's mind mental imagery or thoughts that directly correspond to or copy the perceivable. A novelist describes a character, a newspaper an accident, an historian a battle, a child its dream, a youth his plans; but mathematical physics does not describe an electric spark. If I mistake not, what Pearson means is not "describe" but "explain," as we have used the word. Thus let us not say that such sciences as chemistry, physics, or astronomy literally describe sense impressions; rather let us say that they give us means for inferring what sense impressions have been or will be. But again, let us not say we deduce sense impressions; rather, let us say we deduce propositions that describe the sense impressions or that contain the same information as that revealed to us in sense impression. I believe, then, that we are not altering Pearson's meaning when we say somewhat as follows: We have certain information given us in sense impression; let us call this q . The business of science is to discover a system of propositions p from which q can be deduced most conveniently and economically. Now p is not to be regarded as existential; to regard it so would be to turn mere logical instruments and abstractions into realities. There may be other systems of the class p from which q can be deduced, and they too would then be said to exist. But what system of propositions may be rightly called existential? Only that system the truth of all of whose propositions can be, or has been, directly tested in sense experience. Such a phenomenalist therefore seems to assert that there is but one test of truth, namely, sense impression; mere logical agreement with propositions so tested, or, in general, mere consilience, is not a test of truth. Consequently he demands more of an existential system than do others. It is not enough that q should be true and that p should imply q ; p itself must likewise be submitted to the same test of truth as was q . It is not enough that mathematical physics can by some ether hypothesis

deduce laws of light and electricity, which under experimental test are found to be true. To be more than a convenient device, that is, to be an existential system, this hypothesis of an ether would have to be itself directly tested by observation. In short, not only must p imply q , but it must also either be known to be true or be capable directly of proof. Thus we have in p an existential system if q is true and p implies q , and if p is a proposition whose truth admits of being tested by direct observation; whereas if p can not be thus tested, such a system may be good science, but it must not be confused with an existential system. If this interpretation is correct, Pearson's definition of existence would come under the definition that has been aforegiven. The difference is only that he narrows the class of propositions that may be said to exist. The existent is the sufficient condition of our data and is also perceivable.⁸

Additional evidence in favor of our definition of existence will be found if we consider two important rival definitions. The first is widely accepted. It identifies the existential system with the spatio-temporal world, or perhaps more accurately with the temporal world, regardless of whether the system is perceptible or imperceptible. Thus any term is said to exist if it is related to the instants of time, or, popularly put, if it has position in time. This usage, as Russell has shown,⁹ gives rise to serious difficulties, but can perhaps be modified so as to be made thoroughly consistent. Now, it seems to me that there are some good reasons for preferring our definition to the present one, if the two are consistent. In the first place, the latter

⁸ In Berkeley's doctrine the same result comes out even clearer. Our percepts are but God's messages to us, telling us what future percepts to expect. Thus to say that my friend is in the next room is but to predict the percept you will get if you have the percepts of opening the door and walking in. In short, existence is but the information that implies our percepts. Such also is the meaning of Mill's permanent possibilities of sensation. The idealism or the realism that may go along with these views is for us accidental, a very important point to be noted. The same relation exists between p and q regardless of whether they are only mental states or external non-mental entities. Thus Berkeley's empiricism and nominalism should be kept quite distinct from his subjective idealism.

Our definition of existence would clear up also the ambiguity in the historic question, "Do the secondary qualities exist?" I believe that analysis of the distinction between the two types of qualities shows that difference in implication is at its basis. However, important as a full discussion of this matter would be in justifying or condemning our definition, it would have to be made the subject of a separate paper. My conviction is that our definition of existence could be shown to be at least generic to that implicitly used by the naïve realist and by his opponent.

⁹ "Principles of Mathematics," p. 471. Mr. Russell seems to regard existence as ultimate and indefinable; or, at least, I know of no definition which he has given.

assumes that the real world is temporal. This might be harmless enough if we could agree upon a definition of time and be sure that the world is temporal in the sense thus defined. In the second place, to assume or believe that the real world is temporal is not to avoid the awkward question, Does time itself exist? In short, this definition, by implying that whatever exists is temporal, is itself already an ontology, as are the definitions given by the phenomenologists. But to apply our test here as we did there: Can this definition be shown to come as a species under our definition as a genus? To assert that an entity exists because it is a member of the temporal system means more than merely to give it a position in time, for the whole importance of the judgment is that it relates the entity directly to a context and implicitly to the whole world-order. Indeed it would be impossible to assign a date except by so doing; and as Hume showed, the only method by means of which this can be done is a knowledge of causal relations; for the only ground upon which we can construct our knowledge of the past, of the future, and of the unobserved present is either that their terms imply (causally) the terms we do observe, or that the terms we do observe imply their terms. To assert that a Mycenaean civilization existed at such and such a remote period is but to assert that data now at hand imply or are implied by this civilization. The same thing holds of any past event, those which we have witnessed as well as those which we have not.

The difficulty with this interpretation is not the statement that such implication is involved as the ground of our existential judgments, but rather the doubt whether or not this is the *meaning* of the judgment. To say that Cæsar existed seems so much simpler than to say, "Cæsar implies some of the facts of our day and is consistent with all our other existential judgments." But we must remember that every judgment we pass, such as locating Cæsar in the first century before Christ, is not a bit of information we believe quite isolated from all other information we have. On the contrary, asserting the position of any term in time is always done by means of a larger system as a logical background. Even to say, "This which I see exists *now*," means to relate the event in question to a larger system of terms which it implies and by which it is implied. That this larger system is only implicitly in our judgments does not make it any the less there. This larger system is the world in which we have gradually come to believe through many influences from childhood till now. Thus when as adults and scientists we assign an event its place in time, we are but extending this world system as known by us. In short, we have but discovered new implications

between parts of the system, and verbally this does not have to be made explicit just because it is a matter of course.

There remains a second definition of existence that must be considered at least briefly because of its great importance, namely, nominalism, "only particulars exist." Evidently this is an ontology and not a definition of existence. As an ontology it contradicts Platonic realism, and this a definition should not do. Moreover, when the nominalist gives us a criterion by which to determine whether or not any given particular exists, he usually has recourse to one of the two foregoing theories of existence, that is, to the doctrine that whatever exists either has definite position in time or is perceivable. In short, his definition of existence is an ontology, as were the preceding, and, like these, can be brought under our definition as a species under a genus.

Thus, we conclude, there are two types of existential proposition: the first type is of the form p implies q where p is asserted, and therefore q is asserted; the second type is of the form q is asserted, p implies q , hence p is asserted. Therefore existence can be defined without any ontological assumption other than that presupposed in formal logic; and if it can, it should be so defined. The existent is the asserted sufficient condition of any true proposition; and accordingly a term is said to exist when it is a member of a proposition that is the asserted sufficient condition of some true proposition.

WALTER T. MARVIN.

RUTGERS COLLEGE.

SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on April 24, 1911. An afternoon session was held at the psychological laboratory of Columbia University and an evening session at the Museum of Natural History. Between these two sessions an informal dinner was held at the Faculty Club of Columbia University. The following program was presented:

A Simple Method for the Study of Entoptic Phenomena: GEO. R. MONTGOMERY.

By using small silver beads strung on a wire in a spectacle frame to reflect light into the eye, we have a simple method which has many advantages in the study of entoptic phenomena. From the stand-

point of psychology, perhaps the most important use of such an instrument is in the study of iris movements. For some experiments it is well to cover the frame with a black cloth, allowing the light to reach the beads through a slit. If three beads are used, they may be moved back and forth and the intensity of the light increased or diminished until the middle circle of light thrown upon the retina is exactly tangent to the other two. Such a contrivance allows a view of both pupils at the same time. It also allows careful measurement of dilation and contraction, and furthermore permits the eye and the body to take an easy, normal position.

The use of a single bead with two or three sources of light enables one to diversify the intensity of the circles of light thrown upon different parts of the retina. This is important in determining the parallax of objects in the eye which throw the shadows. Combinations are possible with this arrangement and other experiments, Purkinje's for instance, and the beads may also be used for throwing circles of lights from colored globes upon the retina. These circles may be superposed, the different parts of the retina compared as to color sensation, the effect of contrast brought out, etc.

The Preferred Length of Interval: J. E. WALLACE WALLIN.

The paper detailed the experimental results of two simple methods of investigating the preferred length of auditory intervals: a method of *impression*, in which a preference was reached by successive comparisons of pairs of metronome clicks in a definite order; and a method of *expression*, in which the preference for musical tempos was determined by measuring the durations between the responses (stamps of the foot) made to musical selections by the gallery patrons in theaters.

The results showed, among other things: that the average interval preference with metronome clicks corresponded precisely with the average tempo of the most vigorous responses to musical rhythms (0.51 sec.); that the very general tendency to rhythmize recurrent auditory impressions of the same intensity (metronome clicks) often rested on an ascertainable qualitative basis; that the tendency to perceive different lengths of auditory intervals as indifferent or neutral is infrequent; that instead of selecting a definite, invariable central tendency in respect to interval preferences, the subjects can be arranged most naturally into a number of types (slow, medium, fast, rapid); that the absence of a clear, definite central tendency is due to the fact that the preferences are determined by varying factors permanently or temporarily operative (physical pain, mental disquietude, repose, strain of suspense or expectation, stimulation to movement, rhythmical tendency, associations, suggestions, preference

for melody, harmony, or rhythm in music, but not musical capacity, etc.); that we can lay down limits within which the preferences for intervals and musical tempos will most probably come (0.40 to 0.70 sec.); and that the vigor of the responses in music varies according as the time is two-four or three-four, and according to the relative influence of other factors than that of speed (catchiness or familiarity of the music, incisiveness of the accent, etc.).

Sex and Class Differences in Response to Advertisements: E. K. STRONG, JR.

In an extensive study of the relative value of the motives, which are used in advertisements, that lead one to buy toilet soap, a number of interesting facts as to class and sex differences were noted. It was found that the order of preference for such motives as were obtained from fifty college students correlated very high with similar orders from educated men and from educated women. In fact there were no specific differences between such orders. But an order of preference from a group of one hundred men living in and about Garrison, N. Y., showed a negative correlation. The striking point about this latter order, however, was not so much that uneducated persons do not agree with educated ones with respect to which are the strong motives, but that they do not agree amongst themselves at all—their order being little more than a chance order. This is the more striking when we realize that two groups of educated women correlated as high as $+.93$. In this study it was very clear that women are less variable in their judgments as to the merit of these motives or appeals than are men. Not only were the corresponding probable errors of the medians smaller in almost every case among the women, but the various sub-groups of women correlated higher with respect to each other than did the sub-groups of men. Such motives as “beauty” and “for the baby” ranked higher among the women than among the men, but the surprising thing here was that the two sexes agreed so closely with respect to the other motives.

The Curve of Work: E. L. THORNDIKE.

Professor Thorndike reported results of five subjects, each working eight hours (two hours on each of four days) at adding printed examples, each of ten one-place numbers. It was found that initial spurt did not appear at all as a general tendency in all students, or consistently in the work of any one of them. There was a slight tendency to spurt in the last five minutes, but this was very slight and by no means consistent throughout the group, or important in the case of any member of the group. Warming up was found to play a slight and possibly inappreciable part in the curve of work.

The influence of practise and that of fatigue approximately balanced, so that the general tendency of the character of the work is not only toward rectilinearity, but also toward parallelism with the base line.

The Influence of Caffein on the Quality of Sleep: H. L. HOLLINGWORTH.

Sixteen subjects were given doses of caffein alkaloid (1-6 grains), at varying times of day, for a period of a month. Incidentally to a series of mental tests which were continued throughout this period, each subject recorded the approximate number of hours' sleep after each day and graded the quality of the night's rest as "better than usual," "ordinary," or "worse than usual." Adequate control methods were used. Clear individual differences were shown in the effect of the drug on the quality of sleep—and these differences were independent of age, sex, and size differences. On the basis of the squad averages, doses of 1-4 grains do not impair sleep. Doses larger than these produce sleeplessness. This effect is greatest when the dose is taken day after day, allowing a cumulative effect. When a single dose is taken on alternate days, the effect is greatest when the caffein is taken between meals. Taken with meals, its action is weakened and retarded. Only in exceptional cases does sleeplessness follow the 1-4 grain dose, and in many cases a 6 grain dose is without effect. The "approximate number of hours" of sleep does not seem to be modified by the action of the drug, probably because this matter is controlled by a more or less artificial schedule.

Has Psychology Lost Its Mind? W. P. MONTAGUE.

The movement to dispense with the concept of mind or consciousness and to substitute the concept of behavior as the sufficient object of psychological study was criticized (1) on the ground of ambiguity, (2) on the ground of inadequacy.

1. Behavior, as the movement of an organism in response to stimulus, is ambiguous in that it may mean (*a*) the intra-neural current from sensory center to muscle, or (*b*) the extra-neural motion of the organism or its members. Behavior in the first sense might conceivably be the basis of and hence a substitute for consciousness, but it would be invisible to the external observer and therefore relatively useless as an object of psychological study. Behavior in the second sense is visible to the observer, and so a useful *index* of consciousness; but being extra-neural, it could not possibly be the correlate or basis of the organism's own experience. The motor theory of consciousness derives much of its plausibility from an unconscious shifting from one of these meanings of behavior to another.

2. But behavior in either or both of these senses is inadequate as

a substitute for or even as a correlate of consciousness, (a) because, unless evidence is given for an innervation sense, it can only be the kinesthetic sensations that *result from* one's movement, and never the movement itself, that one experiences; hence to reduce consciousness to movement would be to reduce all sensations to kinesthetic sensations; (b) because the field of consciousness is infinitely too rich a manifold to be put in one to one correspondence with any system of mere motions, internal or external.

The Spread of Christian Science: I. WOODBRIDGE RILEY.

From recent investigations made by Professor Joseph Jastrow comparing the results of the Federal Census of 1910 with the number of advertised Christian Science practitioners, there is shown a three-fold distribution of the sect, chiefly in three pairs of states: Massachusetts and New York, Illinois and Missouri, Colorado and California. Here the pathological factor is first in evidence, for the centers of influence are large cities, with their concomitant nervous disorders, and the health resorts of the mountains and coast. A second factor is that of free thought, or a liberal attitude toward the unconventional such as is found in the given states, with their large cities and their great number of imported foreign faiths. A third factor is financial, a reaction from overmuch material prosperity and a leaning towards a somewhat ascetic immaterialism. This leads to the final factor, the previous idealisms which prepared the soil, such as New England transcendentalism, with the Emersonian call to the "demonstration" of the "spiritual principle," and the German idealism represented in the St. Louis School. These four factors apply not only to the followers of Christian Science, but to the founder; and here Eddyism may be considered not only an after-clap of transcendentalism, but a recrudescence of Neoplatonism. As in Rome and Alexandria, so in America there has arisen a demand for knowledge dependent on "divine" communications; a denial of sensible existence; a contempt for reason and physical science, and a destruction of the distinction between sensible and intelligible. In all this Christian Science shows itself a recurrent phase of the larger movement of so-called New Thought, with its occultism, gnosticism, and mysticism. The type of mind to which the movement appeals is complex—practical and yet uncritical, non-academic and yet speculative. Such a mind fails to distinguish the fundamental fallacy of Christian Science—that while it disclaims materialism, it still reeks with material terms such as "mental offshoots," "gravitation Godward," and the "aroma of Spirit." In fine, the "divine metaphysics" bolsters itself up with the latest physical discoveries, such as Hertzian waves and X-rays, to explain "absent treatment" and silent "demonstration."

Psychoanalysis and the Interpretation of Dreams: E. W. SCRIPTURE.

Psychoanalysis is the term applied to the line of work originated by Freud, of Vienna. Its chief object is to get at the facts of the subconscious. One of its most effective methods is the analysis of dreams. The immediate facts in the dream, the "manifest content," are derived from the immediately preceding experiences of life. The "latent content" is deduced from the "manifest content." The "latent content" of a dream always consists of a wish or fear. A child disappointed by the size of some Bantam chickens dreamed that she had large Cochin Chinas and thus satisfied her wish. A man dreams that he is bald because he has noticed his hair to be getting thin and fears that he will become bald. The "manifest content" of the dream is often symbolic of the "latent content." After a consultation with his physician in which the disagreeable experiences of his past life are discussed, a man dreams of being in a laundry watching the clothes boil in the tank. His dream satisfies the wish to see his "dirty linen" washed clean. A man in financial difficulties dreams of being caught in a terrific snow-storm. This expresses his fear of being "snowed under."

By psychoanalysis the physician gets an accurate knowledge of the patient's mental make-up; this he can get in no other way. He can then proceed to correct the various defects of character such as egotism, stubbornness, viciousness, bashfulness, timidity, etc. Psychoanalysis is the only radical cure for hysteria, the phobias, and psychasthenia.

H. L. HOLLINGWORTH,
Secretary-Treasurer.

COLUMBIA UNIVERSITY.

 REVIEWS AND ABSTRACTS OF LITERATURE

Light and the Behavior of Organisms. S. O. MAST. New York: John Wiley and Sons. 1911. Pp. xi + 410.

"This volume is the outgrowth of an intensive and extensive study of the processes of orientation in plants and animals, especially those without eyes, *i. e.*, a study of the perplexing and interesting question as to how these organisms regulate their activities so as to bend or move toward or from the source of stimulation. But while the book deals primarily with the question of orientation, it has a broader aspect and may be considered a treatise on the behavior of organisms based on their reactions to light."

The author of this thoroughgoing discussion of the influence of light upon the activities of organisms has made his book doubly useful by prefacing his original observations by a history of the problems of reac-

tion to light. With respect alike to the historical sketch and the original materials, the work is excellent.

During the last twenty years a large number of observers have studied reactions to light as exhibited by plants and animals. Early in the history of this work the phenomenon of orientation attracted attention and stimulated observers to the formulation of explanatory hypotheses. About these hypotheses there has accumulated an interesting, if not over-profitable, controversial literature. It is to be hoped that Mast's clear and concise review of this subject, in connection with his important observations of the orientation processes in a number of organisms of widely differing forms, may direct research to the problems whose solution must determine the fate of the hypotheses which have tended to monopolize attention.

In his bibliography the author lists about three hundred and twenty-five titles, of which almost all concern the influence of light on organisms.

By parts the contents of the volume may be described briefly in this manner: I., historical review; II., observations concerning the bending, turning, or moving of organisms with respect to a light; III., adaptation, aggregation, variability, and modifiability; IV., reactions to colors.

The book contains admirable summaries of chapters for the use of readers whose interest impels them to seek the results of the author's investigations rather than a knowledge of his methods, but even to epitomize these summaries satisfactorily would demand an inordinate amount of space. We shall, therefore, limit this notice to the quoting of a few sentences of special interest.

Concerning the evolution of responses to light, the author writes: "The most primitive responses to light are probably due to the effect of continued illumination on synthetic and growth processes in green plants. Responses of this nature we may assume to have been the basis for the origin of all others, which probably appeared somewhat in the order following:

"(1) Change in the rate of locomotion dependent upon the absolute amount of light energy received. No orientation, but probably aggregation at the optimum intensity—*Bacteria*.

"(2) Contraction of naked protoplasm due to sudden changes in the light intensity, *i. e.*, changes in the amount of light energy received, resulting in orientation in some instances—*Amœba*.

"(3) Fixed responses (avoiding reactions) caused by sudden changes of intensity, the nature of the response depending upon the structure of the organism. No orientation, but aggregation at the optimum—*Bacteria*.

"(4) Reactions similar to those under (3), but more definitely circumscribed by the structure of the body, especially the localization of tissue sensitive to light. Definite orientation and movement directly toward the optimum—*Stentor*, etc.

"(5) Reactions to a sign. The change in illumination which causes the response is of no consequence to the organism, but the illumination which would follow if it did not respond may be—*Euglena*, *Volvox*, etc.

"(6) Reactions to a sign. The change of intensity (shadow) which causes the response represents objects which may be beneficial or injurious, food or enemies—*Clepsine*, *Hydroides*, etc.

"(7) Reaction to a sign. The light condition or configuration which causes the response represents objects, not by means of shadows cast by them, but by means of the light reflected from them expressing size, form, or color—animals with image-forming eyes." (Pp. 262-263.)

Thus briefly may be listed the chief points which the author makes concerning the influence of light:

(1) Movement, and changes in the direction or rate of the same, may occur in the absence of any immediate external change, as stimulus.

(2) Sudden changes in the intensity of light, acting upon sensitive tissues, may cause reactions.

(3) Continued constant illumination may affect rate of movement or, by bringing about reversal of the sense of reaction, direction of locomotion. Time of exposure, as well as intensity of light, influences the response.

(4) Under certain conditions a sudden increase or a sudden decrease in the intensity of light may produce the same response.

(5) A certain photic condition may inhibit one form of response and cause another to appear.

(6) Increase in the general illumination of an organism may cause increased activity, and sudden decrease of illumination may cause even greater activity.

(7) An increase in photic energy may cause the same effect as a decrease of thermal energy.

(8) Certain chemicals may cause a change in the sense of reaction—negative to positive, for example.

(9) The stimulating effect of different portions of the spectrum is specific, but it is not the same for all organisms. With the energy constant, some are the more strongly stimulated by blue, others by violet or ultra-violet, others by green and yellow, and still others by red and infra-red.

(10) "Reactions to light are variable, modifiable, and in general adaptive."

The author interprets his facts as more generally in agreement with the Jennings theory of behavior than with that of Loeb.

The book represents a large amount of extremely careful work, both on the literature of the subject and with reacting organisms. It is fair in its treatment of theories, clear in its presentation of facts, and thoroughly reliable.

CAMBRIDGE, MASS.

ROBERT M. YERKES.

Sociology and Modern Social Problems. CHARLES A. ELLWOOD. New York: American Book Company. 1910. Pp. 331.

The purpose of this work, as the author tells us in the preface, is to serve as "an elementary text in sociology as applied to modern social

problems, . . . in institutions where but a short time can be given to the subject." Hence, naturally, it "is not intended to be a contribution to sociological theory," but aims at simple and concrete teaching of elementary principles. We desire to emphasize at the beginning the great importance of this aim: the social sciences have come to hold a dominant place in the general thought of the race, and, like all new elements in thought and life, they must next claim and occupy their place in the education of youth. Already something is being done in college courses in economics, political science, and sociology, and a little in high schools in the way of civics; but no one can doubt that the social element in the curriculum must be greatly enlarged, and that as fast as possible. To this end the first academic requirement is the creation of a body of competent teachers; a second important step is just this of the text-book.

Professor Ellwood has, we believe, made a real contribution, and particularly in this way, that while most other texts are written to introduce the student to the further academic study of sociology, his book is suited to that great majority of students who will necessarily carry on their further study of the subject not in the classroom but in the school of life. The most important feature of the book in this respect is its general make-up, the first part being an introduction to the *elements of sociology*, and the last half being devoted to *social problems* of to-day; that is, the book represents the ground often covered by the first two courses in colleges, sociology and social problems. As things are, very few students get to social problems at all, and yet, for every reason except the purely academic one, social problems should take precedence of sociology: the former course has a more powerful appeal to the interest of the students, and a more direct and lasting relation to their future life and thought; of this one could hardly find a better proof than the list of problems included in Professor Ellwood's book—the modern family (with special reference to marriage and divorce), growth of population, immigration, the negro problem, the problem of the city, poverty, crime, socialism, education; could any topics in the whole range of human thought have a more universal appeal to the interest of students or a more universal value to their future intelligence?

In fact, we are almost convinced that social problems should actually precede the principles of sociology as being the indispensable concrete basis, the laboratory material, as it were, for any true and strong grasp of the theory. We make the suggestion with regard to Professor Ellwood's book itself, whether it would not be better to begin with Chapter VII., "The Problem of the Modern Family," and end with Chapter I., "The Study of Society"? The truth is that Chapter I., like many so-called introductions, is really a conclusion. What is the study of society? It is useless to *tell* the student: he can find out in one way only, and that is to study society, especially in such concrete forms as are discussed in Chapters VII. to XIV.: after he has done this, let him, if you will, look back and ask the question intelligently. Chapter II., by the way, on the bearing of the doctrine of evolution upon social problems, is truly introductory, and exceedingly appropriate.

The task of selecting material for such a text-book is of course a perplexing one: it would be hard to find a field more affected by the embarrassment of riches. It may be questioned whether this book does not allow the extended treatment of the family to crowd out other topics quite essential to even an elementary book: we look in vain for anything but incidental remarks upon the great social forces, as distinguished from the social forms through which they work; besides the student is likely, from mere stress of attention, to forget that business, the school, the state, and the church are also essential forms of human organization.

The chapter on "The Problem of the Modern Family" seems open to some criticism. In the first place its real theme is not the modern family, but only one acute pathological aspect of it, divorce; marriage is treated only incidentally and very scantily; even under the discussion of remedies for the divorce evil, too little attention is paid to our lax marriage laws and customs, and to the probability that better regulation of marriage, both legally, ecclesiastically, and socially, is the most hopeful means of improving the situation as to divorce. Moreover, marriage appeals to a wholesome and natural interest of young people, and thus affords a far better approach to the problem of the family as a whole.

The style is remarkably free from blemishes of any sort; it is clear and readable throughout. One special excellence with respect to the purpose of the book as an introductory text is the absence of all unnecessary technical terms, a point in which it differs greatly from some books written for the same purpose.

There is a wide-spread conviction that there must be an increase of the social sciences in the high school course: why could not such a book as this of Professor Ellwood's be used with classes in the last year of the secondary school? All the experts on adolescence tell us that the high school student is an intensely social creature, and that his mind is reaching out to grasp and comprehend his relations to his fellows. We believe that no branch of human knowledge would have a stronger appeal to the interest of high school youth and that none would more effectively stimulate their powers of thought and reflection; certainly none could contribute more richly to their ability to escape fallacies and attain the truth in the questions they must meet later as citizens and members of community life.

EDWARD O. SISSON.

THE UNIVERSITY OF WASHINGTON.

On the Theory of the Infinite in Modern Thought. E. F. JOURDAIN.
Longmans, Green, and Company. 1911. Pp. 55.

This little volume contains two essays read at Oxford in 1905 and 1908 respectively. The first, "The Problem of the Infinite and the Finite," was read before a meeting of women science students; the second, "Pragmatism and a Theory of Knowledge," before a philosophical society.

"The Problem of the Infinite and the Finite" is an exposition of

those modern mathematical researches that Russell and Royce have made familiar. We can summarize the conclusions and applications in the author's own words. "He [the mathematician] starts from the aggregate, which he analyzes into the finite and the infinite, and the latter he analyzes into the transfinite and the absolute" (p. 20). "If the finite deals with numbers, and the transfinite with series of numbers, the absolute deals with series of series" (p. 21). "There is no greatest finite number, but there is a least transfinite number. . . . Beyond the transfinite we can not discover in the absolute the idea of least or of greatest, . . . and in the absolute we can not trace any connection between cardinals and ordinals, *i. e.*, it is possible to have an ordinal series to which there can be no corresponding cardinal number or type. . . . all mathematical processes which find their goal in the absolute would find their annihilation there. No finite mathematical conception would be applicable to it" (pp. 21-23). "Some mathematicians think that it exists, but has no number. It is discovered by a logical process, but defies analysis and the application to it of the notion of number" (p. 23).¹ "Its [the absolute's] philosophical importance is great: the absolute is here, as elsewhere, the goal of human thought, and is the mathematician's name for the highest power discoverable by human reason" (p. 24). "How . . . would Hegel have rejoiced in a definition of thought and existence which would bridge over the logical gulf in his system! Hegel asserted that thought and existence were one. . . . But the mathematician defines existence as something that is not self-contradictory. Thought, then, to him is a form of existence, for thought is not self-contradictory. . . . Hence, to say that non-contradiction is a fundamental condition of true thinking is as much as to say that it is a fundamental characteristic of real existence, and he identifies thought with reality" (pp. 24-25). Happy Hegel!

As to the second essay: Pragmatism has three main difficulties. (1) It has no absolute. "The pragmatist considers that nothing is which is not a result of human action, and lowers the divine element to the result of human individual activity" (p. 32). But James is refuted by H. Jones, Ormond, and others. (2) It denies scientific law and logic, the latter by the help of logic. The pragmatist's assumption that laws may work although relative, is greater than the absolutist's assumption of faith. "Each day that the sun goes on rising finds the absolutist in a better philosophical position and the pragmatist in a worse, except on the assumption that the link between man and the external world is a false imagination" (p. 40). (3) It neglects the results of modern mathematical research. (a) Royce is right in asserting "that any consistent attempt to make an orderly arrangement of the terms of an infinite whole must lead to the indefinite regress. And he further shows the connection with the fact that an infinite series can be adequately represented by a part of itself" (pp. 43-44). (b) Keyser has shown the power of mathematical conceptions to overcome the seeming paradoxes of the Athanasian Creed.

¹ Yet we read (p. 13), "Philosophers, who have never attempted the analysis"—shade of Bradley!—"have been inclined to accept certain contradictions in their conception as inherent in the nature of infinity."

Even the antithesis between the omniscience of God and the freedom of man disappears "if we realize that from the point of view of infinities the dignity and power of omniscience remain the same, even if some part of experience is not yet drawn into the sphere of omniscience" (p. 47). (c) And now science needs the fourth, or rather n th, dimension of modern geometry, but why this helps out idealism or damns pragmatism the present writer fails to understand.

Perhaps it would be unfair to subject these popular discourses to criticism.

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JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA. January–March, 1911. *Il Caso* (pp. 1–33): C. RANZOLI. – Examines three kinds of chance—common or lacking causality; metaphysical, or lacking finality; scientific, or lacking predictability—and leans to the last, *i. e.*, universal determinism, as opposed to idealism, makes the unpredictable character of a phenomenon a sign not of independence but of causal dependence. *Sulla positività come carattere del diritto* (pp. 34–48): GIORGIO DEL VECCHIO. – The positive is not an essential of the right, but is determined by judicial decisions. *Logica e matematica* (pp. 49–70): CORRADINO MINEO. – Discusses Bertrand Russell's "Principles of Mathematics," Couturat's logistics, and Peano's symbolism. *La filosofia naturale dello Schelling e le nuove correnti del pensiero* (pp. 71–77): MICHELE LOSACCO. – Schelling's view of nature as rational is compared with that of Bergson and the neo-vitalists. *Intuito e sintesi primitiva in A. Rosmini* (pp. 78–96): P. CARABELLESE. – Intuition is a transcendental condition of perception, synthesis the relation between sensation and the idea of existence. *Del fatto educativo* (pp. 97–116): C. TOMMASO ARAGONA. – The chief factor in education is spontaneous—a phenomenon of becoming proper to the individual. *La guerra, la pace, e la filosofia* (pp. 116–128): G. MAZZALORSO. – War and peace are alternating phases in a determined rhythm. *Un teologo e apologeta riformatore della fisica e dell' astronomia* (pp. 129–134): L. LANZI. – Criticizes Gustavo Pecsì's interpretation of Benedetto Castelli's letter to Galileo Galilei as to the Aristotelian diction concerning the uncreated existence of motion in the universe. *Recensione e cenni. Rivista delle riviste. Notizie. Atti della Società Filosofica Italiana.*

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. April, 1911. *Sigieri di Brabante nella Divina Commedia e le fonti della filosofia di Dante* (pp. 187–195): BRUNO NARDI. – Siger of Brabant, the chief representative of Averroism in the University of Paris, is that same "Sigieri" mentioned by Dante in the tenth canto of the "Paradiso." *Sul fondamento della realtà morale* (pp. 196–211): M. S. GILLET O.P. – The educational value of the Catholic system of morality comes from the divine

absolute upon which the system rests. The apparent force of the modern ethical systems is derived from the same absolute, which they unconsciously admit. *Saggio di esposizione sintetica del pragmatismo religioso di W. James e di F. C. S. Schiller* (pp. 212-231): E. CHIOCCETTI. — An exposition of the pragmatic theories of James and Schiller on the conception of God and religion. *Note e discussioni. Tribuna libera. Analisi d'opere*: F. Klimke, S.J., *Der Monismus und seine philosophischen Grundlagen*: P. GÉNY, S.J. E. Peillaube, *Les images*: A. GEMELLI. F. Queyrat, *La curiosité*: L. BIANCHI. A. Manzoni, *Osservazioni sulla morale cattolica*: F. LAZZATI. L. Majoli, *Lucere et ardere: Pensiero e storia da Augusto a Dante*: R. FUSARI. B. Croce, *Secondo Supplemento alla Bibliografia Vichiana con appendice di Fausto Nicolini*: E. CHIOCCETTI. G. Vailati, *Gli Scritti*: A. CAPPELLAZZI. A. Anile, *Vigilie di scienza e di vita*: L. CAVALLI. *Note bibliografiche. Notiziario. Sommario ideologico.*

REVUE DE MÉTAPHYSIQUE ET DE MORALE. May, 1911. *L'importance philosophique de la logistique* (pp. 281-291): BERTRAND RUSSELL. — A rather popular résumé of the author's views on infinity, continuity, implication, deduction, and the status of mathematics. *Une réimpression de Cournot* (pp. 292-295): L. LEVY BRUHL. — An analysis of the conditions that delayed the recognition of Cournot's real eminence. *Sur quelques textes de Bacon et de Descartes* (pp. 296-311): P. TISSERAND. — Texts are cited showing Descartes's debt to Bacon in the "Discourse on Method." *Dieu dans la philosophie de Lagneau* (pp. 312-351): P. TISSERAND. — An historical study of the proofs of God's existence accepted by Lagneau. *Etudes critiques. Le criticisme de J. F. Fries et le problème de la connaissance*: A. KRONFELT. *Discussions. Sociologie théorique et sociologie pratique ou réformiste*: A. FOUILLEE. *Sur le principe de l'induction mathématique*: E. WICKERSHEIMER. *Sur le principe de l'induction mathématique*: G. VACCA. *Sur le principe de l'induction mathématique*: A. PADUA. *Enseignement. Une leçon de logique*: R. AUDIERNE. *Questions pratiques. Supplément.*

Smith, William Benjamin. *Ecce Deus*. Jena: Eugen Diederichs Verlag. 1911. Pp. xvi + 316. M. 5.

Smith, William Benjamin. *Der vorchristliche Jesus*. Jena: Eugen Diederichs Verlag. 1911. Pp. xxxi + 243. M. 4.50.

NOTES AND NEWS

PROFESSOR E. G. SPAULDING, secretary of the American Philosophical Association, sends us the following preliminary report of the forthcoming annual meeting of that Association: The meeting will be held in Cambridge, in acceptance of the invitation of the philosophical department of

Harvard University, probably on December 27, 28, and 29. The topic which has been selected as the leading subject for discussion is "The Relation of Consciousness, Organ, and Object in Perception." Leaders will be chosen for this discussion, and these leaders, together with the president, will act as a committee to formulate propositions and definitions on the subject, and these will be made known to the members of the Association as early as possible. In addition to the above subject, four others have appeared as seemingly representing, judged by the automatic vote of the Association, topics of dominant interest to the members. Accordingly the executive committee has decided to introduce the innovation of asking for papers on these subjects, with the distinct understanding, however, that this action is not intended to exclude papers on other subjects. These four subjects are as follows: (1) "The Nature of Cause and the Place of the Conception in Metaphysics"; (2) "What, precisely, are we to understand by the term Evolution?" (3) "The Nature of Logic. Does the study of the subject deal with thought processes, or with quite non-mental terms and relations?" (4) "Do persistent illusions presuppose consciousness? If so, what consequences follow?" Members are invited to submit papers on these or other subjects at any time previous to November 20, and are requested to send along with the title a brief outline.

PROFESSOR BALDWIN, editor of the "Dictionary of Philosophy and Psychology" (Macmillans), informs us that the "new edition corrected" recently put upon the market is not a revised edition. The new edition was printed without consulting him, the changes being reported to him as "certain corrections received by the Oxford Press (the printers) after the first edition was printed"; that is, certain *corrigenda* have been incorporated. He himself deprecates the use of the term "new edition" for a mere reprint, especially if the date of issue, which is generally taken to be the date of original publication, is changed on the title page.

THE council of the Royal Anthropological Institute of Great Britain and Ireland sent to the recent Imperial Conference in London a memorial urging the establishment of an Imperial Bureau of Anthropology. The proposal is that the bureau should be established in London and that it should be managed by a committee composed of the council of the Royal Anthropological Institute and representatives of the governments of the British Dominions, of the Indian and Colonial Offices, and of those universities in Great Britain, in India, and the colonies and dependencies of the empire where anthropology is systematically studied.

A NOTABLE addition to the facilities offered by Paris as a center of anthropological research is the Institute of Human Paleontology recently founded by the Prince of Monaco. In the new institute the Abbé H. Breuil, formerly of the University of Fribourg, occupies the chair of prehistoric ethnography, and Dr. H. Obermaier, a former colleague of Professor Hoernes at Vienna, that of geology in its relation to prehistory. Professor M. Boule, of the Museum of Natural History, Jardin des Plantes, is the director.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

EXTERNAL RELATIONS AND THE "ARGUMENT FROM MISSOURI"

THOSE who maintain the doctrine of the "externality" of relations are likely to be met by the challenge, "Show me a relation which makes no difference to its terms." It therefore becomes desirable to indicate that this argument is irrelevant to the strict point at issue.

The contrast of "internal" and "external," literally interpreted, as applied to the nature of relations, is apt to seem to the "innocent bystander" a little bit forced. "Of course," he tells you, "it makes a difference to a man what the tariff laws are, and whether his wife can cook, and what is his chance for promotion. This doctrine of the externality of relations is absurd." He then finds himself apparently helpless in the hands of the "internal-relationist," who calmly deduces that the universe is one eternal and completed whole, constituted by thought and unified into one perfect truth. He does not quite see what the matter is, but all this does not seem to follow necessarily from the apparently harmless assertion that he feels better when the weather is pleasant. Maybe this is logic—but then he does not have much use for logic, anyway. Are relations internal or external? Why not ask whether all men are liars or all men are not liars? Like Frank Stockton, when the hostess asked him to choose between the lady and the tiger molded in pink ice-cream, he feels disposed to say, "A little of both, if you please."

Perhaps this instinct points to the correct solution. Perhaps "internal" and "external," taken literally, do not precisely designate the exhaustive dichotomy which is intended. It is reasonable to take a doctrine for what it means to those who uphold it seriously. The present is a case in point. We ought to take the doctrine of external relations for what its defenders take it to be, the *contradictory* of the doctrine of internal relations. The question concerns certain supposedly necessary formal deductions from the nature of relationship in general. Those who hold that relations are external

to their terms will deny no case which can be empirically found, in which a term undergoes a specifiable alteration by entering into certain connections; they do deny that one can deduce from the nature of relation, as one might from the nature of number deduce that two plus two equals four, that a relation must alter the terms it connects. They assert that all such deductions involve either a circle or a self-contradiction. No case of a physical body can be empirically adduced whose geometrical behavior can not be explained in non-Euclidean terms, and yet this does not prove that Euclidean geometry does not fit our experiential world. The case for external relations is somewhat analogous, but stronger than that for the applicability of Euclid, since the internal view has been shown to lead to contradictions or at best to a complete transformation of our ordinary world.¹ An *a priori* deduction, if validly made from the formal logical character of relationship as such, would moreover apply equally to all relations and make them each and all equally con-

¹Into all the details of the purely formal logical difficulties of internal relations we can not here go. Various contradictions have been pointed out by B. Russell, E. G. Spaulding, and others. To these, as regards the deduction of an absolute total, may be added the following:

To be able to assert that an entity is defined or constituted by the totality of its relations to the universe, would seem to require our making the following postulates: (1) Every entity is defined by the totality of its relations. (2) Every relation is an entity. (3) (To prevent a radical-empiricist "strung-along" universe.) If *A* is related to *C* and *C* to *B*, then *by virtue of* this fact there must always exist a relation which is not the *mere* sum of the two mentioned (but symbolizable *ACB*) between *A* and *B* direct. If *B* is related to *D*, then *A* is related to *D* (symbolized by *ACBD*). If the universe constitutes a totality *T*, then there exist, by (3), entities which can be placed in one-one correspondence with all the permutations of the possible combinations of the constituent entities of *T*. But these are more numerous than *T*, however infinite *T* may be (unless, indeed, *T* is but a blank unit). Therefore there exists no last totality *T*, and hence no entities defined in terms of all their relations to the other members of that totality.

It might be urged that the entities may be defined, not in terms of various relations to the various entities in the universe, but in terms each of the *one* relation which it holds to the totality as such. Thus the entity might be a consciousness *C* knowing or intending to know *the totality T*. If this *C* be *identical* with *T*, it is but *T* over again. If it be a proper part of *T*, it is, as defined in terms of the totality *T*, logically subsequent to the completion of *T*, and hence not a part of *T*. The case is parallel to "Richard's antinomy" of the decimal fraction defined in less than one hundred words as different from the *n*th such decimal in the *n*th term, hence both belonging and not belonging to the totality of such decimals. It follows that that which is defined in terms of a totality can not be a part of such totality, but is logically subsequent; and this contradiction can no more be evaded by "accepting an infinite regress" than taking *all* the whole numbers will give us a *last* prime number. He who would find a final totality must therefore leave behind not only empirical experience, but formal logic as well.

stitutive and vital. It is this sort of "internality" against which the externality theory is a protest.

The doctrine of internal relations holds that since every entity is constituted by the totality of its relations, it follows that all relations are of equal intrinsic importance, since the destruction of any one of them would destroy the entity. The doctrine of external relations holds the contradictory of this, that since all relations are not of equal intrinsic importance, it follows that an entity can not properly be said to be constituted by the totality of its relations. It is obvious that the internal view as thus stated can not be adequately defended by any appeal to the empirically observable importance of any given relation to the objects it relates. On the contrary, the argument takes a markedly *a priori* form. It is asserted that all distinctions of varying *importances* in the constituents of an entity are made by us for our own private practical purposes. The important stands in contrast to the unimportant, the essential to the unessential, the one implies the other, the unimportant turns out to be important for the nature of the important, the unessential essential for the defining of the essential. Therefore all are equally important, all equally essential, all equally necessary. A typical example is the proof that the world is fundamentally a product of will. I will a certain act; I will, therefore, the necessary conditions of that act; I will, therefore, the world in which that act occurs; in vain do I will that that world shall be independent of my will, for that also is my will. Evidently all this is dialectic of the *a priori* sort, and is neither supported nor refuted by any empirical observation.

The external view, on the contrary, maintains that no such *a priori* leveling of all relations is valid; and so one is left free to give to each relation that degree of importance which is due it in each particular context. So far is it from the truth that all distinctions of essentiality and importance are merely for our private convenience, that, on the contrary, all leveling of such importances is only an aid to our observations. The scientist at first takes all facts presented as being of equal rank, because he is as yet *ignorant of their proper rank*. As he grows in knowledge, so also does he grow more and more discriminative and selective; and this selection is based, he believes, on the nature of the objects in question. The notion of the equal necessity of all things, whether in themselves or for us, grows grotesque as one carries it into the particular cases. Let us suppose I have a wooden leg and therefore find it convenient to take a street-car across town. I will to go across town conveniently. I therefore will the necessary conditions of this act of will. I will, therefore, that I shall have a wooden leg. To will this, I must will that I shall have my leg cut off. Therefore I will that I shall

have my leg cut off—for my own convenience! Such is the Procrustean bed of internal relations!

The case of the scientist above mentioned is especially noteworthy. The concept of causality has gradually been robbed of its most useful significance, its analytic applications, because of the over-emphasis on the notion of law *per se*—just enough though this may be as in contrast with the “force” notion of cause—since it has been found that the more a law is universalized, the less significant is it apt to become. The fact is that he who formulates a law picks out certain relations as the important and fundamental ones. It is this analysis and weighing of essential factors which genuinely underlies the search for “laws” and “causes”—and indeed the notions of “economy” and “conceptual shorthand,” for the economy of statement which is not based on an understanding of what is objectively important is as insipid a piece of ingenuity as is inscribing the Lord’s prayer on a postage-stamp. The division of the field among the sciences, though likely to be faulty because done *a priori*, is itself evidence of a faith that certain relations can be abstracted from, without failing of objectively valid results. But partisans of theories of internal relations vigorously deny that any such *objective* difference of rank is to be found among relationships; they are different in their moment only so far as their value for our personal purposes causes us to make such distinctions. Not unnaturally, along with this conclusion goes a subtle but distinctly marked depreciatory attitude towards all the results of “merely empirical science.”

The vigor of the rebellion against this sort of leveling monism has perhaps tended to an insistency upon the externality of relations which has unnecessarily laid itself open to the criticism with which the present paper began. It has seemed to offer, as a new “logical realism,” a world of variegated atoms thrown together in kaleidoscopic external combinations. But this is uncalled-for. The realist might better declare that certain entities are more constituted by their relations than others, certain of the relations of a given entity are more essential to it than others. Those entities which are least affected by any of their relations are called “simples,” those most affected, “complexes.” A perfect case of *either* is more or less ideal; but a near empirical approach to a “simple” is perhaps the quality of a single sensation, to a “complex,” an ethical personality.

We have thus far purposely avoided the “burning issue” in epistemology, “Does thought make a difference?” Here the attitudes of the two parties are curiously reversed; for the “internal-relationist,” somewhat inconsistently, is often particularly anxious *not* to level down thought relations among other relations even so

far as to let them stand on their observed merits. He argues that every object of which you can think has thought relations, every relation is constituent of the objects which it relates; therefore, thought is a necessary constituent of all objects. Moreover, the parts of a chair are indeed not parts save as they belong to the chair, but they do not reveal this internally, hence are not true parts; but the parts of a consciousness are supposed to be little consciousnesses, each potentially the total, hence revealing *internally* their true "organic" relationship. This shows that thought is unique. To this the "external-relationist" replies that he finds no need for this particular notion of whole and part, and certainly no decisive empirical proof. In the sphere of knowledge proper, as elsewhere, it is never a question as to whether or no a relation "makes a difference" in the abstract, but always a particular question as to what precise difference a given relation makes. It is evident also in the case of knowledge that any assigning of the precise difference made by knowing is a sufficient bar to the argument for subjectivism. Moreover, take for example the case of a judgment about a past event: does it alter that event? There may be distinguished two phases which we may call the "logical" and the "cosmological." Suppose you say to a man, "You did wrong yesterday." This judgment may perfectly well make a change, it may cause him to repent and make amends. Cosmologically it may make a difference to the object judged. But logically the warrant for the truth of my assertion is what he did yesterday, not the fact that he repents to-day. As an *object* enduring through time, that which is judged may be changed; as a past *event*, it is irrevocable. There is, then, a specifiable sense in which the past is evolved into the present by thought about it, and an equally definite sense in which the past can never be altered. It is hopelessly confusing to merely reiterate wildly: "Thought makes a difference."

The critic of externality who perhaps deserves most consideration is Bergson, for he, recognizing that logical precision and internality are incompatible, consistently prefers to throw over logic, and does not attempt to call such vague notions as that of "identity in difference," which leave utterly unspecified the proportions, conceptions of exact logic. Logic is to reality, from this point of view, as Newtonian mechanics—as certain recent physical theories hold—is to the actual behavior of bodies, or as the principal when interest is compounded semi-annually to the principal when interest is compounded "continuously"; *i. e.*, as, in the cases cited, we have a steadily increasing divergence with high velocities or long intervals, so does logical distinctness diverge from the interpenetration of experience. The past which is strictly unchanged is a construct of

ours, a "conceiving time in terms of space," *i. e.*, in terms of objects entirely external to one another.² But even he need not suppose a wide departure from logically deducible results, especially when taken in simple cases or over short stretches of time. But the absolutistic internal view can not be founded on any appeal from logic to experience; it founds on an obscure and contradictory dialectic a theory which transcends all experience of which we know anything.

We set out to prove the thesis that an appeal to experience does not show that relations are internal as against external, in the precise sense in which there is an issue of present significance between them. We have attempted to show that the real conflict is between an absolute internality theory and one which holds that there may be degrees of relative internality. The former holds to the absolute relativity of all things other than the universal totality; the latter holds that the unity of the universe may be no stronger than its weakest link,³ and the parts may have any degree of independence as determined in each case on its own merits, for relations vary in their *intrinsic importance* to the entities which are their terms. To repeat: the doctrine of internal relations holds that since every entity is constituted by the totality of its relations, it follows that all relations are of equal intrinsic importance;⁴ the doctrine of external relations holds that since all relations are not of equal intrinsic importance, an entity can not properly be said to be constituted by the totality of its relations. Any other statement of the issue would make some intermediate doctrine not only possible but probable, because absolute internality *versus* absolute externality is not an exhaustive dichotomy. The true antagonism is that between the "monistic" and the "analytic" theories of relations. Hence the challenge, "Show me empirically a relation which is obviously absolutely external to its terms," does not squarely meet the problem.

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² Though that "space" is not merely metaphorically used in this connection may be illustrated by the Lorentz-Einstein theory in recent physics, which takes time as a strictly coordinate fourth dimension of space.

³ Who would not grant the miserable boon of existence to an absolute whose wasp-like waist was composed of the most trifling relation to be found in all the world?

⁴ The dog which howls at the moon could say, "You would be different were I not here." Truly, this doctrine is consoling!

DISCUSSION

EXPERIENCE AS PURE AND CONSCIOUSNESS AS
MEANING

THE current idealistic doctrine that experience is constituted by subject and object in indissoluble relation to each other has recently been challenged by two writers in the pages of this JOURNAL. William James and Professor Woodbridge propose in place of this doctrine the view that consciousness is not the subject-term of a subject-object relation, but is itself a relation between terms, and that this relation is an external relation which does not in any way change the character of the terms which it relates. These two thinkers differ, however, in the identification they make of the relation which is properly to be called consciousness. The former treats consciousness as the relation which obtains between two experiences when one passes into the other in the continuum of personal biography. The later experience, as appropriating the earlier, stands to it in the relation of consciousness. Consciousness is nothing but the felt continuity of the later experience with one that has preceded it. No experience taken by itself is conscious; it is just pure experience, without any inner duplicity; it is a mere *that*, whose nature is all told when you have enumerated the sensible qualia and relations which are in "the instant field of the present." When consciousness arises, it comes as a new relation tying two successive experiences to each other in such a way that they now both belong to the same self.

For Professor Woodbridge, on the contrary, consciousness arises when, in addition to the multifarious relations that obtain in the world, a relation of meaning arises between objects. Under the guidance of common sense and of science, "we are wont to think of a world without consciousness in it as a world devoid of meaning. Add consciousness to that world and then meaning is added, but nothing else."¹ "Consciousness may be defined, therefore, as a kind of continuum of objects," and "the distinctive character of that form of continuity which we have when objects are in consciousness" is such that objects "become representative of each other."² "Such phrases as 'conscious of' and 'conscious that' have often been taken to indicate that consciousness is not simply the kind of relation I have indicated, but that it has in addition the property of 'awareness,' which gives to things a peculiar and immediate kind of presence. I am not sure but that we find ourselves here in a verbal

¹"The Problem of Consciousness" in "Studies in Philosophy and Psychology by Former Students of Charles Edward Garman," 1906, p. 160.

²"The Nature of Consciousness," this JOURNAL, Vol. II., p. 121.

difficulty, for what is it 'to be aware' of anything? If we can not make the 'awareness' responsible for the thing's qualities or for its spatial and temporal relations, what is then left to constitute that peculiar presence? Indeed, it seems to me, on analysis of the situation, that just this character of 'awareness' turns out to be the manifold and irresistible meaning connections which the things in the conscious situation have. These connections hold the things in such a network of immaterial groupings, that their presence is quite other than merely spatial, temporal, or specifically qualitative. It is to be noted also that the 'awareness' diminishes in its evident character just in proportion as the linkage of meanings becomes deranged. I do not find at present, therefore, convincing facts to indicate that 'awareness' involves an additional characterization of consciousness.'³

In this paper I wish to examine these views of James and Woodbridge; and I select them for this examination because it seems to me that, while in either case something of fundamental importance is overlooked that should be taken into consideration in determining the nature of consciousness,⁴ still the common contention of these thinkers is sound, and that consciousness is itself a relation between objects and not a term of a relational complex. My paper will therefore be a criticism of views with which I am in part in hearty agreement, and will concern itself with details and not with the general doctrine of the relational view of consciousness.

In determining what consciousness is, we may of course be largely dealing with a verbal definition. Different thinkers may agree as to facts and yet differ as to what facts they shall call by certain names. Now it is difficult to criticize the two views under examination without incurring the reproach that one is simply concerned with the question of the correct application or denotation of a word. To make it clear that this is not my concern here, let me say that what I wish to establish is not that consciousness is properly to be used to designate something that James and Woodbridge are not willing to call consciousness; but that there is something, call it what you will, that neither James nor Woodbridge has given explicit recognition to; that this something is constitutive of what we call experiences, and that it is relational in character.

James's doctrine of the nature of consciousness is based on his doctrine of pure experience. "My thesis," says he, "is that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff 'pure experience,' then knowing can easily be

³ "Studies in Philosophy and Psychology," p. 161.

⁴ Unless consciousness be arbitrarily defined.

explained as a particular sort of relation towards one another into which portions of pure experience may enter. The relation itself is a part of pure experience; one of its 'terms' becomes the subject or bearer of the knowledge, the knower, the other becomes the object known."⁵ This doctrine of pure experience is developed in antithesis to the "neo-Kantian" theory that consciousness is "the logical correlative of 'content' in an Experience of which the peculiarity is that *fact comes to light* in it, that *awareness of content* takes place."⁶ This "neo-Kantian" view is stated by James in two quotations, one from Mr. G. E. Moore and one from Natorp. "The moment we try to fix our attention upon consciousness," says Mr. Moore, "and to see *what*, distinctly, it is, it seems to vanish. It seems as if we had before us a mere emptiness. When we try to introspect the sensation of blue, all we can see is the blue; the other element is as if it were diaphanous. Yet it can be distinguished, if we look attentively enough, and know that there is something to look for."⁷ "Consciousness," says Natorp, "is inexplicable and hardly describable, yet all conscious experiences have this in common, that what we call their content has this peculiar reference to a center for which 'self' is the name, in virtue of which reference alone the content is subjectively given, or appears. . . . While in this way consciousness, or reference to a self, is the only thing which distinguishes a conscious content from any sort of being that might be there with no one conscious of it, yet this only ground of the distinction defies all closer explanations. The existence of consciousness, although it is the fundamental fact of psychology, can indeed be laid down as certain, can be brought out by analysis, but can be neither defined nor deduced from anything but itself."⁸ "Now," says James, "my contention is exactly the reverse of this. *Experience, I believe, has no such inner duplicity; and the separation of it into consciousness and content comes, not by way of subtraction, but by way of addition—the addition, to a given concrete piece of it, of other sets of experiences, in connection with which severally its use or function may be of two different kinds.*" A "given undivided portion of experience, taken in one context of associates," plays "the part of a knower, of a state of mind, of 'consciousness'; while in a different context the same undivided bit of experience plays the part of a thing known, of an objective 'content.' In a word, in one group it figures as a thought, in another group as a thing. And, since it can figure in

⁵ This JOURNAL, Vol. I., p. 478.

⁶ *Ibid.*, Vol. I., p. 479.

⁷ *Ibid.*, Vol. I., p. 479, quoted from *Mind*, Vol. XII., N. S., p. 450.

⁸ *Ibid.*, Vol. I., p. 479, quoted from "Einleitung in die Psychologie," 1888, pp. 14, 112.

both groups simultaneously, we have every right to speak of it as subjective and objective at once.”⁹ “Consciousness connotes a kind of external relation, and does not denote a special stuff or way of being. *The peculiarity of our experiences, that they not only are, but are known, which their ‘conscious’ quality is invoked to explain, is better explained by their relations—these relations themselves being experiences—to one another.*”¹⁰

In short James resolves everything into experiences, even relations between experiences being themselves experiences. It is important, therefore, to ascertain what experience is, which is thus the stuff of which everything is made. This question James himself answered, first putting it in the mouth of an objector in this form: “If experience has not ‘conscious’ existence, if it be not partly made of ‘consciousness,’ of what then is it made? Matter we know, and thought we know, and conscious content we know, but neutral and simple ‘pure experience’ is something we know not at all. Say *what* it consists of—for it must consist of something—or be willing to give it up.” Then James proceeds: “To this challenge the reply is easy. Although for fluency’s sake I myself spoke early in this article of a stuff of pure experience, I have now to say that there is no *general* stuff of which experience at large is made. There are as many stuffs as there are ‘natures’ in the things experienced. If you ask what any one bit of pure experience is made of, the answer is always the same: ‘It is made of *that*, of just what appears, of space, of intensity, of flatness, brownness, heaviness, or what not.’ Shadworth Hodgson’s analysis here leaves nothing to be desired. Experience is only a collective name for all these sensible natures, and save for time and space (and, if you like, for ‘being’) there appears no universal element of which things are made.”¹¹

The bearing of this reply upon the contention that there is “no aboriginal stuff or quality of being, contrasted with that of which material objects are made, out of which our thoughts of them are made,”¹² does not seem to have been appreciated by James. For if such a relation as space is a distinct stuff out of which, among others, a pure experience is made, why should not the “external relation” between experiences, which James makes consciousness to consist of, and which is itself an experience,¹³ be itself just one of the many aboriginal stuffs which we must recognize as entering into the constitution of thought? “Personal histories are processes of

⁹ *Ibid.*, Vol. I., p. 480.

¹⁰ *Ibid.*, Vol. I., p. 486.

¹¹ *Ibid.*, Vol. I., p. 487.

¹² *Ibid.*, Vol. I., p. 478.

¹³ *Ibid.*, Vol. I., p. 486.

change in time, and *the change itself is one of the things immediately experienced,*"¹⁴ "and any kind of relation experienced must be accounted as 'real' as anything else in the system."¹⁵ This relation of consciousness a radical empiricist must hold fast to, and must take at its face value, neither less nor more; it has a whatness, and "this whatness is real empirical 'content.'"¹⁶ Even though consciousness be a "function in experience," the fact that it is a content of some experiences makes it as much a "stuff" of which those experiences are made as is any other of the contents in those experiences. It is one of "the originally given continuities" that ought to "stand on their own bottom,"¹⁷ and as originally given it has as much aboriginality as anything else. To resolve consciousness into an external relation, therefore, is not to deny that where this relation exists, it is "an aboriginal stuff or quality of being"; and if this relation is always present where there are "thoughts" and makes an experience to "figure as a thought,"¹⁸ then *it is the specific stuff of which thoughts are made*; that is, it is the specific stuff which, added to other specific stuffs, makes a thought out of what it is added to. James's doctrine, therefore, of the nature of consciousness, when stated in terms of the recognized specific differences of "stuffs" out of which experience is made, does not after all turn out to be a denial that consciousness is an aboriginal stuff or quality of being, although he started out with such a denial. It turns out to be simply a denial that this specific aboriginal stuff is to be found in every experience. Although there is an aboriginal stuff out of which, when added to other sorts of aboriginal stuffs, "thoughts" are made, this stuff is not an essential ingredient in all experiences. An experience is "pure" when this ingredient is absent from its constitution. "Save for time and space (and, if you like, for 'being') there appears no universal element out of which all things are made," and by things it seems that a radical empiricist means, when he makes this statement, "pure experiences." This seems to be the accurate statement of the results which James as a matter of fact arrived at.

Now the question arises whether it is not possible to find, *in every experience*, some other common stuff than time and space, and, if you like, "being": some other universal element out of which all experiences are made. In asking this question, we need not be inquiring about the existence of some "entity," but of some-

¹⁴ *Ibid.*, Vol. I., p. 536.

¹⁵ *Ibid.*, Vol. I., p. 534.

¹⁶ *Ibid.*, Vol. I., pp. 536-7.

¹⁷ *Ibid.*, Vol. I., p. 537.

¹⁸ *Ibid.*, Vol. I., p. 480.

thing of a relational character, of a character more or less like that which time and space are usually regarded as having or being. This question, as I understand it, James answered decidedly in the negative. But I think that it can be shown that on this question, just as on the question whether there is an aboriginal stuff or quality of being out of which thoughts are made, James reached a result which was in one sense the opposite of that he set out to obtain; and it can be shown that his failure to recognize this fact gives a paradoxical character to many of the expressions that he uses. For instance, every reader of his article, "Does Consciousness Exist?" will remember the passage in which he seeks to show how "the room he sits in" is an experience which is situated at the place of intersection of two processes, which connect it with different groups of associates, and which make it possible therefore that the room should be counted twice over, although all the time it remains a numerically identical thing.¹⁹ "What are the two processes, now," asks James, "into which the room-experience simultaneously enters in this way? One of them is the reader's personal biography, the other is the history of the house of which the room is part. . . . As a room, the experience has occupied that spot and had that environment for thirty years. As your field of consciousness it may never have existed until now," etc. The paradox comes from treating the room, when considered as a physical thing, as *an experience* which has occupied that spot and had that environment for thirty years. What is meant by calling this particular room, with a time span of thirty years, and practically unchanging space relations, an experience? Or, to put the question in a more general form, what is meant by calling anything an experience? Is anything whatever, that is ever experienced, itself a bit of pure experience, a "unit of pure experience"?²⁰ The philosophy of radical empiricism, so we are told, regards the pure experiences, "in themselves considered," as "so many little absolutes," and such pure experiences "can be postulated with any amount whatever of span or field."²⁰ We have had one instance of "a unit of pure experience" in the room in which I sit; we have another instance given us in "this pen"; and if we may judge from these instances, it would seem that every concrete thing in the universe is a unit of pure experience. Let us now return to our question, What is meant by calling it an experience?

If we answer this question from the point of view given us by the statement that there is no universal element in things except time

¹⁹ *Ibid.*, Vol. I., pp. 481-2. This identical thing that the room is, is in this passage treated as "*an experience*," whether taken in connection with one group of associates or with the other.

²⁰ *Ibid.*, Vol. II., p. 181.

and space, then it would seem that any concrete thing in time and space is *as such* an experience, and that to call it an experience is not to predicate of it anything else than a spatial and temporal character. This, however, is obviously not James's meaning, as appears from this most significant paragraph:

In this sense we at every moment can continue to believe in an existing *beyond*. It is only in special cases that our confident rush forward gets rebuked. The beyond must of course always in our philosophy be itself of an experiential nature. If not a future experience of our own or a present one of our neighbor, it must be a thing in itself in Dr. Prince's and Professor Strong's sense of the term—that is, it must be an experience *for itself* whose relation to other things we translate into the action of molecules, ether-waves, or whatever else the physical symbols may be.²¹

It seems, then, that every unit of pure experience must be *an experience for itself*, and be of an *experiential nature*. If this be not to maintain that a *common* experiential nature, in addition to common spatial and temporal natures, enters into the constitution of all concrete bits of experience, I can not understand what the words mean. Can we get any light from other passages in James's articles on what this common experiential nature is? I think we can.

For radical empiricism "*the relations that connect experiences must themselves be experienced relations.*"²² "To be radical, an empiricism must neither admit into its constructions any element that is not directly experienced, nor exclude from them any element that is directly experienced."²² "There are as many stuffs as there are 'natures' in the things experienced."²³ "Here as elsewhere the relations are of course *experienced* relations."²⁴ It would seem, then, that an experience is made up of things *experienced*, these things being themselves made up of the various natures experienced. Things not experienced are not experiences or parts of experiences; and the experiential nature that things outside of our own experiences are assumed by radical empiricism to have, is just *experiencedness*. "The instant field of the present is at all times what I call the 'pure' experience. . . . In this *naïf* immediacy it is of course *valid*; it is *there*, we *act* upon it."²⁵ In our experiences "the continuities and the discontinuities are absolutely coordinate matters of immediate feeling."²⁶ In an experience, then, there is a field, within which there are things having a *naïf* immediacy, and this immediacy is an immediacy of feeling. "Pure experience," as "the original flux

²¹ *Ibid.*, Vol. I., p. 569; the italics are James's own.

²² *Ibid.*, Vol. I., p. 534.

²³ *Ibid.*, Vol. I., p. 487.

²⁴ *Ibid.*, Vol. I., p. 483, footnote.

²⁵ *Ibid.*, Vol. I., pp. 485-6.

²⁶ *Ibid.*, Vol. II., p. 30.

of life before reflection has categorized it," is "full both of oneness and of manyness, but in respects that don't appear. . . . Pure experience in this state is but another name for feeling or sensation."²⁷ In short, an experience is a unity of things present in the way of immediate feeling. One thing present spatially in the same spatial field with another thing does not make with that other thing an experience; nor does it do so if it is present with another thing in a temporal way. It must be present in a *feeling* way. This does not necessarily mean that feeling is something *to* which these things are present. It may merely mean that feeling is a way in which things are together *with each other*, just as space is one way in which things are together with each other. If feeling be made a unique kind of relation that obtains among certain "natures," then, whatever may become of the doctrine that the beyond must be of an experiential nature, we have an account of the nature of experience that is in accord with the general spirit of James's philosophy, and an account which distinguishes between what is immediately felt and the feeling of it, between what is experienced and the experiencing of it, without which distinction no meaning can be given to the statement that only things *experienced* can be taken into account by an empirical philosophy. If feeling be made a unique relation subsisting between the things felt, then we can understand how there can be "an instant field of the present" which does not include everything that exists at the present time. Only those things which are related together in the way of immediate feeling and thus combined into a particular feeling group will be present in that particular instant field of the present. If this view of feeling be accepted, then we can understand how "*experienced relations*" can be "members of the same originally chaotic manifold of . . . experience of which the related terms themselves are parts."²⁸ The experienced relations and the experienced terms between which they obtain are all terms of the feeling relation which obtains among them all, and which binds them all into an experiential unity of which both the experienced relations and the experienced terms are members.

This last paragraph is not intended as an interpretation of James's thought. It is an attempt to interpret the facts that James made use of, and which he did not interpret, and to interpret these facts in a manner similar to that which he employed in interpreting what he called the function of consciousness. My contention is that there is no justification for calling anything "a unit of pure experience," when that thing has no community of nature with other things called "units of experience." A community of nature must

²⁷ *Ibid.*, Vol. II., pp. 29-30.

²⁸ *Ibid.*, Vol. I., p. 483.

be recognized where a community of name is justified, and unless that community of nature in the case under consideration be a community of relational nature, then it must be a community of quality or of "entity," or of some other sort not specified.

If this interpretation of the nature of experience be accepted, then in one sense it can be said that experience has no inner duplicity—it is *not* constituted, namely, of subject and object in *subject-object relation*. And yet it has an inner duplicity in that it is capable of analysis into objects, on the one hand, and into the peculiar relation of feeling, on the other, which binds these objects together into an experiential unity. Again, if this interpretation of the nature of experience be accepted, it makes little difference whether we apply the name "feeling" to the relation or way of togetherness that constitutes objects into an experience, or whether we prefer to call this relation "consciousness." Personally I think violence is done to current usage if we arbitrarily decline to allow this relation to be called consciousness, and restrict this term to the relation in which a later experience stands to an earlier when the two experiences belong to the same self. But as I have said before, I do not care here to enter into a terminological or lexicographical discussion.

Let us now pass to the consideration of Professor Woodbridge's identification of consciousness with meaning relation. The question that we have to ask here, as in the case of James's doctrine of consciousness, is not what distinct factor in experience we shall call consciousness, but whether Woodbridge's analysis of experience has succeeded in distinguishing all the factors. In taking up this problem, we can not do better than by beginning, as Woodbridge begins, with the realism of common sense. In other words, let us assume for the present, without discussing the ultimate tenability of the assumption, that there is a real world that existed before consciousness of it arose. Now, to avoid speculation about matters that are largely guesswork, let us not go back to the very beginning of your experience or of mine, but let us take our departure from a point which is accessible to every one. This morning, let us say, you woke from a deep sleep, which left behind no memory of dreams. What happened when you thus woke? In answering this question, let us leave out of consideration the important problem of the specific occurrences that took place in your nervous system at the moment of waking, and let us confine our attention to a description of things that can be described without taking into account the specific happenings in the nervous system. The room in which your bed has its place, with all its contents, was there before you woke, and the furniture of that room had certain spatial interrelations

which presumably were not altered by your awaking. What, among other things, occurred in this room when "consciousness came back" to you, was that "a field of view" arose, in which some of the surfaces of certain pieces of furniture were included. This field of view did not include those surfaces which were turned away from your body, nor did it include the many things which lay outside of the spatial field more or less in front of your eyes. This field of view is well indicated by the drawing given by Karl Pearson on page 64 of his "Grammar of Science," second edition. All the objects in this field of view were already there before you awoke; your awaking did not produce them, but it did bring these objects together into a certain group which did not exist before. The arising of consciousness either consisted of or was accompanied by²⁹ a new integration of these objects in such wise that they came to exist in a togetherness or combination, and from this combination many objects equally existent at the time were excluded, and many features of the objects that were included were likewise excluded. If you awoke because I called you, there was, at the moment when you woke, another field of view which I call *my* field of view at that time. This field of view included certain surfaces of the same articles that were included in your field of view, but more or less different surfaces, and some of the articles in my field of view were not in yours and some in yours were not in mine. Each field of view, as a group of qualities and relations, had a unity of its own. The fact that more or less the same objects appeared in the two fields of view did not prejudice the distinctness of each group as a group. The arising of your field of view was *not* an arising of a meaning relation between all the objects in that field of view; it might not even have been the arising of any meaning relation between any of the objects in that field of view. If you were still quite stupid from sleep, probably none of these objects had any meaning in terms of any other as they appeared in that field of view. They simply were there together in a certain way. Whether or not we choose to call this way of togetherness consciousness makes very little difference; but whether we shall call it a continuum of meaning does make a great deal of difference. We may be more or less at variance with each other in our employment of the term consciousness. The history of the word has been quite full of adventures into new fields; but "meaning" we are all quite well agreed upon, at least as regards its denotation. *Words* have meaning, *clouds* mean rain, *ideas*, to peo-

²⁹ For the present I do not care whether you say "consisted of" or "was accompanied by." Which you say will depend upon the definition you may choose to give to the word "consciousness." The fact that such an integration as is mentioned above occurred is as indubitable a fact as can well be named, whatever name we may give to the fact.

ple who have them, mean objects; a *purpose* means its fulfilment; but by the most liberal stretch of indulgence we can not allow the propriety of saying that the dressing-table you saw in your field of vision when you woke this morning meant everything else you saw at the same time. The clothes that lay in view may have meant putting on, but they did not mean the window and the electric "fixtures" and the wall-paper and the pictures on the wall and all the miscellany that went to make up the group of things in that field of view. All these things did form at that time a continuum, but the continuum was not one of meaning in any sense which meaning has ever had in ordinary English. The nature of this continuum which was formed when you awoke is the most fundamental problem of philosophy; it seems to me that the problem is not solved but perplexed by saying that meaning is the only thing that arises when this sort of continuum arises.

If meaning be the only thing that is added to a world of things when consciousness arises, I can not see how what is thus added can be at the same time *one* meaning relation between two things and also be *two* or more consciousnesses. As the difficulty is thus stated, it may not be clearly understood; let us therefore take some concrete examples which may bring the difficulty out into relief. "One thing may be a certain measurable distance from another thing," says Professor Woodbridge," but it may *mean* that other thing without encompassing the distance. And I wish to emphasize the fact that this relation of meaning which is so prominent among the things is just as much a *relation between them* as is space or time. It is the ice which means that it will cool the water, just as much as it is the ice which does cool the water when put into it. The water which means that it will quench thirst is the water which does quench thirst when swallowed. I take a powder to dispel the pain in the head, not only because pain and powder are incompatible in juxtaposition, but incompatible also in their meanings."³⁰ Now when one thing is a certain measurable distance from another thing, there is at any particular time just *one* distance between them when measured by some fixed unit. The University Hall on the Wisconsin campus is just one mile from the capitol of the state of Wisconsin; there are not as many miles as there are different persons who see these buildings. Now how many meaning relations are there between these two buildings? When *A* wagers with *B* that *A* can walk the distance between them in ten minutes; to *A* University Hall means ten minutes of his walking to the capitol; to *B* it means more than ten minutes of *A*'s walking. Here the same thing has two meaning relations to another thing, expressed in terms of *A*'s fast-

³⁰ "Studies in Philosophy and Psychology," p. 159.

est walking. These two meaning relations, if consciousness be meaning relation, can very well be regarded as constituting the difference between *A*'s consciousness and *B*'s consciousness. So again, the powder you take to relieve your headache means for you ease from pain; to me it may mean intensification of your pain and ruin of your constitution. Here again, as the meanings are different, our consciousnesses are different, if meaning is consciousness. But how is it when to both of us University Hall means a five-minute trolley ride to the capitol, and the same powder means cephalalgia removed? With one meaning shared in common between us, do our consciousnesses become one?

Professor Woodbridge has given his answer to this question. "Consciousness," he says, "may be defined . . . as a kind of continuum of objects. From this definition an important aspect of consciousness can be deduced, namely, the isolation of any individual consciousness. Two continuums of the same kind can not be parts of each other. They stand over against each other as closed systems, so to speak. The spaces and times of our dreams are not interchangeable with those of our waking moments. Two species are not interchangeable. Two consciousnesses are also not interchangeable."⁸¹ I suppose that most of us will agree as to the truth of the last sentence; but I can not see how it can be true if consciousness be a relation of meaning between objects. Leaving aside the difficult problem of the spaces and times of our dreams, what shall we say of the spaces and times of our waking moments? May not the spaces of my waking moments be the same as those of yours? May not the times be the same times? If the continua of my waking space and time may be the same as those of yours, may not the meanings of my waking moments be the same as yours? If it is the ice that means the cooling of the water and if it is the same ice for you and for me, may not the meaning relation of this same ice to the cooling of the same water be the same? If so, how about the isolation of individual consciousnesses, if consciousness is the relation of meaning? Two species are non-interchangeable, I am inclined to think, because identity of origin and structure obtains in the two species *among two different sets of objects*. The same kind of relation among two different sets of objects gives non-interchangeable groups; but I hardly know any better instance of absolute identity of relation than we have when we have the same kind of relation obtaining among numerically the same things. If consciousness be nothing but a relation of meaning, why does another's consciousness refuse to coalesce with mine when there is the same relation of

⁸¹ This JOURNAL, Vol. II., p. 121.

meaning obtaining between the same ice and the same lowered temperature of the same water in the two cases?

To make this difficulty more definite, it would be necessary to go fully into the question of the difference between generic identity and numerical identity. This can not be done here, but I will indicate what seem to me the broad outlines of this difference. We may have generically the same quality in two different objects, and we may also have generically the same relation obtaining between two different sets of terms. "*Whiteness is one thing, the whiteness of this sheet of paper is another thing.*"³² The quantitative relation between two and four may be exactly the same generically as the quantitative relation between six and twelve. Neither qualities considered apart from the relations in which they stand, nor relations considered apart from the terms between which they obtain, have numerical identity. In other words, numerical identity *as applied to quality or relation* is the identity of a quality or a relation in so far as either is a constituent factor of identically the same concrete relational complex. Numerical identity belongs in the first instance to concrete things in their own right *as concrete*,³³ and in the second instance to qualities or relations only in so far as these qualities or relations are individualized in being elementary components of concrete things. Generically the same relation obtaining between two identical terms within numerically the same concrete whole is not *two* numerically different relations, but identically the same relation. The similarity of the nose structure of John and James may be generically the same as that between the features of Thomas and William. But the similarity of nose structure in John and James is not several numerically distinct similarities but one numerically identical similarity, this numerical identity being determined by the numerical identity of the relational complex constituted by John's and James's noses as similar. We not only have interchangeability between this similarity of nose structure in John and James *and* this similarity of nose structure between John and James again at the same time, we have a similarity which is numerically identified. This same principle obtains, so far as I can ascertain, in the case of all relations. Hence I can not see how it *follows* that if consciousness be a continuum of meaning relation among objects in such wise that these objects become representative *of each other*, there can be two numerically different relations of representativeness, of generically

³² James, "Principles of Psychology," Vol. I., p. 473.

³³ Whatever this may mean. Into its meaning we can not go here; I simply assume that it has a meaning which has to be accepted first in its denotation, and then becomes a problem for further investigation as regards its connotation.

the same kind, between numerically the same objects, any more than there can be two numerically different similarities of generically the same kind between numerically the same features of John and James. In saying this, I am not denying that meaning relation may be *an exception* to the general rule which I have mentioned above as holding with regard to the numerical identification of generically the same relation. I am merely denying that from the account of consciousness as meaning relation between objects given by Professor Woodbridge, there "*can be deduced* the isolation of any individual consciousness." If any deduction can be made, it is exactly the opposite one. Such a view must resort, not to deduction, but to given fact, to support its contention of the isolation of any individual consciousness. And if resort be had to fact, then it must be shown that as a matter of fact every isolated given consciousness is an isolated given meaning. I am not sure that success in such a demonstration would not put us in a worse predicament than we might suspect. It would, I believe, be a demonstration that *meanings are incommunicable*, just as incommunicable as sense-qualities are on certain idealistic theories. Your isolated consciousness would be your isolated meaning relations between objective things, and my isolated consciousness would be my isolated meaning relations between objective things. There would be no way of comparing my meaning relations with yours to see whether they even have a *generic* sameness.

These are some of the difficulties that have prevented me from adopting Professor Woodbridge's identification of consciousness with meaning relation. It may be that they can be removed; but until they are, they seem insuperable. Until they are removed, I can not but think that the value of Professor Woodbridge's doctrine of consciousness is to be found in the attention which he has succeeded in drawing to the general thesis that consciousness is relational in character, not in the specific identification of the consciousness relation with meaning relation. As shown above in my criticism of James, I think we must acknowledge, if we are to carry forward the relational view of experience, that there is a unique way of togetherness which obtains among all the objects of an experience, a way of being felt together, of being experienced together, which is neither the way of meaning nor the way of appropriation of *past* experiences, but a way which "must be taken at its face value, neither less nor more." This way of being felt together is as distinct from all other ways of togetherness as meaning relation is distinct from "co-conscious transition." Before there can be an appropriation by present experience of past experiences, these past experiences must have been experiences; before meaning relation can be talked

about by philosophers, some meaning relations must have been experienced. To be experienced is an ultimate fact not to be identified with anything else; and when it has been identified as what it is, and we all agree upon the identification, then we can profitably proceed to discuss other philosophical questions upon a common plane of debate. Until that is done, appeal to experience becomes a shibboleth which will scarcely differentiate us from each other, seeing that all of us have learned to screw our vocal organs into the necessary position to pronounce the word without provincial accent.

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REVIEWS AND ABSTRACTS OF LITERATURE

La logique de la contradiction. FR. PAULHAN. Paris: F. Alcan. Bibliothèque de philosophie contemporaine. 1911. Pp. 183.

Rich in illustration from many departments of human life and interest, conceived and written with true French clearness and felicity, this monograph is a masterly statement of the empirical doctrine of contradiction. While the rationalist tends to believe that certain combinations of thought or belief are and always will be contradictory, M. Paulhan asserts that "il n'y a peut-être pas, à proprement parler, de 'contradiction logique' au sens absolu du mot" (p. 1). At the same time he finds that our thought, feeling, action, are full of *apparent* contradiction, *i. e.*, contradictions not yet resolved. And this too is a good thing, for it is better to be broad in our sympathies, to embrace conflicting doctrines in the hope of later reconciling them, to adopt new points of view apparently conflicting with the old, than to retain a narrow and unprogressive consistency. "Et il vaut mieux supporter dans l'esprit quelques contradictions que d'étouffer le germe de nouvelles idées qui peuvent être fécondes, ou de désorganiser trop rapidement les anciennes" (p. 151). The presence of as yet unresolved conflicts in our thought, feeling, and active life is pointed out in Chapter I., *La contradiction dans l'intelligence, le sentiment, et l'action*. Ideas are contradictory when they imply two incompatible propositions: *e. g.*, the idea of God, as often entertained (p. 7). Simultaneous feelings also may be apparently incompatible; we may love and hate the same person even in one and the same respect ("sous le même rapport," p. 8). In active life we may seek an end, and at the same time refuse to pursue the necessary means thereto. Morality indeed is only "une tentative pour rendre l'action logique et en éliminer la contradiction" (p. 13). But these are not cases of absolute and unconditional contradiction: it is only that we have not yet learned to reconcile the seeming opposition. A pure case of contradiction would be "l'impossibilité de l'accord, de l'association harmonique entre deux ou plusieurs sentiments, deux ou plusieurs actes réels ou virtuels" (p. 17). But such

a case we do not find among the conflicts of life: for in life the most opposite feelings, thoughts, deeds, are combined. Where feelings, etc., are contradictory, they are *not* united. Here clearly the question of ultimate inconsistency is settled by an appeal to fact. Valuable and convincing as M. Paulhan's argument here is, we fear it would not convert the rationalist who finds logical inconsistency in all identification of different qualities. And we fear it the more as the author himself appears to find contradiction in just those cases: for he speaks of "dissemblance et la contradiction qui l'accompagne" (p. 52), and says also, "Qui dit différence dit aussi opposition et contradiction. Ce qui est différent se contredit toujours" (p. 35). To make all difference contradictory is very close to the position of the absolute rationalist, *e. g.*, Mr. Bradley. Has not M. Paulhan proved too much, in his argument for the ubiquity of contradiction?

Chapter II., *La contradiction et l'identité*, exhibits the thought-world as always between the two extremes of unconditional contradiction and pure consistent identity. Identity is everywhere mixed with difference: our deepest scientific conceptions (*e. g.*, the ether) contain conflicting properties, and even the syllogism is a unity of identities-in-difference. The whole situation is like the play of antagonist muscles by which organisms live (p. 51).

Chapter III., *La contradiction impossible*, is a careful exposition of the empiricist thesis. "... les choses, les idées ne s'opposent jamais si complètement qu'il soit impossible de les unir en certain cas pour une fin commune" (pp. 58-9). What appears contradictory to one person or at one time, is not so to another or at another time. This holds even in mathematics, where truths are conditional always. Nor can we say that anything is absolutely impossible, on the ground that it contradicts the known laws of physics. Contradiction is relative to the situation. "C'est la réalité qui nous apprend ce qui se contredit, non la contradiction qui nous renseigne sur la réalité" (p. 69). And so the supposed opposition between law and freedom, between endless and finite time in the past, are not final (p. 73), for if they coexist in fact or are both valid for reason, they can not be contradictory. Yet the critic, we think, must ask M. Paulhan, How have you proved your position that fact can not be contradictory? Is it by appealing to fact? Surely this would be a vicious circle.

Chapter IV., *La contradiction nécessaire*, emphasizes, with telling illustrations, the necessity, even the utility, of apparent conflict in our progressing life. That life is "a permanent conflict, an incessant contradiction" (p. 103). Of course he means no absolute logical one, but an appearance of internal hostility which goads us to a broader point of view. The presence of these contradictions indeed is not to be avoided, but rather to be *managed profitably*. What is needed for the better conduct of the understanding is not the formal process of resolving contradictions, but "la logique du plus grand profit intellectuel" as expounded in Chapter V. "Elle comprendrait l'étude des logiques spéciales et professionnelles, des manières de raisonner propres à certains individus, à certains groupes sociaux—des sophismes même et de procédés qui diffèrent généralement

beaucoup de ceux que recommande la logique classique, des formes concrètes d'argumentation, que l'on emploie souvent dans la discussion sans en avoir apprécié la valeur et la portée" (p. 125). It tells us when contradictions are advisable, viz., when they form "un des facteurs de l'organisation de l'esprit, un moyen de l'enrichir et de le systématiser, de multiplier et d'unir nos idées et nos croyances" (p. 130). As a poison may be a remedy, so a contradiction may be useful. Does this mean that we should often accept both of two conflicting alternatives and trust to a later and better knowledge to adjust them? If so, we must heartily agree with M. Paulhan. Just this is what philosophers should do in their perennial quarrels, as I have argued elsewhere.¹ The task of our logic should be "de tendre à régulariser les conflits des idées et des croyances, de manière à en tirer le plus grand profit intellectuel, mais sans prétendre à les supprimer complètement" (p. 137). But I should add, we ought also to endeavor to show *how* the apparent contradictions may be resolved. For after all we can never rest until that is done.

Chapter VI., *L'usage de la contradiction*, again reverts to illustration of the value of contradiction in human work and productivity. A man as a scientist is one, as a religious devotee quite another—and it is better so. Metaphor and simile in literature are inconsistent, yet of the greatest suggestiveness. In the social world, party opposition is more fertile of gain than general agreement. And there are many similar illustrations. M. Paulhan's familiarity with human nature is here, as in his other works, strikingly evident.

Altogether the volume is a distinct addition to our information on that rather neglected but philosophically most important subject, the meaning and rôle of contradiction. I say "most important" because if philosophers contradict one another more than any other class of thinkers, surely they need most urgently to know the nature of contradiction.

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The Individual and Society, or Psychology and Sociology. JAMES MARK BALDWIN. Boston: Richard G. Badger. 1911. Pp. 210.

The essay embodied in this little book appeared originally under the title of "Psychologie et sociologie (l'individu et la société)" in Series 18 of the French *Bibliothèque internationale de sociologie*. Writing under exacting limitations of space, the author makes no attempt to establish or develop his argument and offers the book chiefly as an illustration, a popular résumé, of the social philosophy contained in his other works. As such it serves as a useful and readable introduction, and those who have had difficulty in keeping their bearings in the larger works will find it to their purpose. The character of the book hardly calls for a detailed review, but the presentation of the doctrine in compact form is a temptation to some general remarks, to which I shall yield.

The central idea of Professor Baldwin's social philosophy is this: that,

¹ *Philosophical Review*, May, 1911.

since the human species is composed of distinctively conscious beings, or of beings who are conscious to a distinctive degree, the mutual relations of its members must be construed as the relations of conscious agents, or persons, who are in communication with one another. Only those who are thus related may be said to constitute a society. And therefore the only proper standpoint for the interpretation of society will be psychological rather than biological.

So far he performs an important service. It still remains to ask, however, how far the psychological standpoint is correctly represented. The question may be put in two ways: (1) How far does he give us the relations of conscious beings *as such*, and not rather those of certain mechanical models, patterns, pictures, images, assumed to represent the conscious facts? (2) How far is he true to the point of view of the persons who are conscious—in other words, how far does he describe society from the standpoint of “one of the crowd” or from that of one who surveys the crowd?

1. Professor Baldwin formulates the relations of conscious beings in terms of “invention,” where the individual makes a contribution to society, and “imitation,” where he receives a contribution from society. Together they constitute a process of “give-and-take” (his favorite phrase) whereby, through the diffusion of the benefits of individual initiative, the race maintains a constant progress—in the direction (it would seem) of ever greater uniformity. Consider, however, the following: Let a quantity of ink come into contact with a quantity of molasses; the ink will become sticky by imitation and will make the molasses inky by invention. Add some powdered glass and stir thoroughly; the general give-and-take will result in a uniform condition of inky-sticky-gritty, which marks the attainment of social solidarity; and with each new ingredient there is progress. Suppose, however, that some of the ingredients be related as salt and sulphuric acid. Then of course there will be trouble, and the trouble will be settled only by the expulsion of one or more elements as socially unfit. Now the caricature is crude, I admit, and every caricature is more or less unfair. But on the whole it seems to me to embody the main points of Professor Baldwin’s social theory, yet without the presence of consciousness. What difference, then, does consciousness make? In other words, how does the give-and-take of conscious communication differ from the mere interchange of mechanical quantities?¹

2. This leads to the second form of the question. On page 22 Professor Baldwin tells us that “imitation to the intelligent and earnest imitator is never slavish, never mere repetition; it is, on the contrary, a *means to further ends* [the italics are his], a method of absorbing what is present in others and making it over in forms *peculiar to one’s own temper and valuable to one’s own genius*” [italics mine]. As a statement of the point of view of the conscious agent, nothing could be much better;

¹ Cf. Professor Dewey’s review of Baldwin’s “Social and Ethical Interpretations” in the *Philosophical Review*, Vol. VII. (1898), p. 398.

every conscious activity, including even "imitation," must express the individual character of the agent and fulfil his purposes. On what ground, then, may he be commanded to observe a "tempered individualism"?² Nay, for that matter, as society advances, a constantly diminishing individualism? Because, I should say, the formulation of the social relation is now guided by a mechanical figure of give-and-take, according to which what is imparted to another is necessarily parted with by the giver, and because again, along the same lines, since the competition of individual aims involves displacement, the larger the social group the less room there will be for each member. In other words, the point of view has now changed from the psychological view of the agent to that of the external and impersonal surveyor of the crowd. Social history is now viewed as a matter of taking up material from society—*e. g.*, such as the "results" of science—working it over and passing it on. In this view the significance of the transaction for the individual is left out of account. And when this is forgotten the illusion becomes almost inevitable that he is doing all this simply for the sake of society, and that his sole purpose in life is to make himself useful. There are many traces of this in Professor Baldwin's view. In spite of the importance attached to "invention," the individual tends to become a merely transitional feature in an impersonal and not really "social" process, with the result that, in the end, the superiority of the psychological over the biological standpoint for the study of social evolution loses much of its original significance.

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Natural Philosophy. WILHELM OSTWALD. New York: Holt. 1910.
Pp. ix + 193.

This small book is a translation of the first number in Reclam's series, *Bücher der Naturwissenschaft*. Its position in that series corresponds with the belief of the author that science needs to be approached through philosophy—that is to say, through "natural philosophy." Natural philosophy is defined as "the most general branch of natural science"; and the book accordingly consists of a rapid and simple survey of the most general concepts of natural science, preceded by a statement of the theory of knowledge on which the survey is based.

In such small compass there is much summary assertion, whose only argument is the success and speed with which the whole world of knowledge is put into order. Part I., "General theory of knowledge," treats of the growth of concepts from repeated experiences, their purification, and the work of science. "The prophecy of future events based upon the knowledge of the details of recurring events is called science in the most general sense." There is no such thing as a deductive science; but there

² And yet "tempered individualism" is an excellently suggestive phrase, if only the point of the figure is clear. Unquestionably the aims of an intelligent person are tempered, in the sense of being guided, enlightened, and, if you like, refined, by a consciousness of the aims of others in his world; but this is not yet to say that they are renounced or even compromised.

is a deductive procedure. "Deduction is a necessary complement of, in fact, a part of, the inductive process." Professor Ostwald accepts with little change Comte's classification of the sciences; whence the remaining three parts of the book treat in order of the formal sciences, the physical sciences, and the biological sciences, under which last rubric are included psychology and sociology.

Perhaps the most interesting part of the book is the sketch of a much revised logic, in its relations to mathematics, geometry, and kinematics ("phoronomy") which, as constituting the circle of formal sciences, treat of "characteristics belonging to all experiences." Logic is treated as the "science of the manifold": and having built up the concept of a *group* (better, *assemblage*), from the "most general concept," *thing*, the logic proceeds to discuss the various possible arrangements of assemblages, and to open the way into the sciences of number, of language, etc. Then is introduced the concept of *continuity*, which the author with pleasing liberality describes as equally general with *thing*; the theories of measurement and of functions are opened, and their first applications made to the sciences of space, time, and motion. There are here at least valuable suggestions of the reshaping which logic must undergo as a result of recent generalizations in mathematical theory.

The outlining of the biological sciences is least satisfactory. Teleology, which is held to be wholly subjective and arbitrary, is assigned an objective standard—the efficiency of an organism in transforming energy. This principle, as a foundation for our preferences, promises little power in sociology. Spencer's inference reappears that conflict must diminish, because it is wasteful of life (Ostwald says, of energy); and there is a plea for social equalization on the ground that the energy-wasting rôle of leader is now less necessary than it has been.

There are a few errors in printing, as on pp. 27, 32, 43.

WILLIAM ERNEST HOCKING.

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JOURNALS AND NEW BOOKS

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. May, 1911. *Notion de la scolastique médiévale* (pp. 179–196): MAURICE DE WULF. — Scholastic philosophy is a systematized and synthetic conception of the cosmos; and it is as such that it must be studied and characterized. *Conditions philosophiques de l'évolution* (pp. 197–211): P. LE GUICHAOUA. — The theory of evolution, in so far as the different animal species and the human body are concerned, may be accepted and brought into harmony with the traditional philosophy. *La vérité et le progrès du savoir* (pp. 212–229): CHARLES SENTROUL. — The definition of logical truth as "the conformity of the judgment with a real identity" is the only definition of truth by means of which the truth of knowledge can be reconciled with the progress of the same. *Les initiateurs italiens du néo-thomisme*

contemporain (pp. 230-254): AUGUSTE PELZER. — New data on the origin of the neo-scholastic revival in Italy. *Le quatrième congrès international de philosophie* (pp. 254-271): M. DE WULF. — A review of the work and discussions of the Fourth International Congress of Philosophy, held in Bologna in April, 1911. *Comptes rendus*: E. Lanusse, *Études et controverses philosophiques*: D. NYS. Hugon, *Cursus philosophiæ thomisticæ*: D. NYS. G. Lechalas, *Étude sur l'espace et le temps*: D. NYS. J. Siméon, *La prescience divine et la liberté humaine*: N. BALTHASAR. N. Moeller, *Un chapitre de l'histoire de la philosophie en Allemagne. De Leibniz à Hegel*: F. PALHORIÈS. J. Segond, *La Prière*: L. NOËL. G. Rémacle, *La philosophie de S. S. Laurie*: F. PALHORIÈS. C. Perriollat, *Chrétien et philosophe*: F. PALHORIÈS. A Scharpe, *Mysticism*: M. DE WULF. Mgr. A. Farges, *Théorie fondamentale de l'acte et de la puissance ou du mouvement*: N. BALTHASAR. J. H. Boex-Borel, *Le pluralisme*: N. BALTHASAR. *Chronique philosophique. Sommaire idéologique des ouvrages et revues de philosophie.*

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Majewski, E. de. La théorie de l'homme et de la civilisation. Paris: Le Soudier. 1911. Pp. 352.

Muller, A. Das Problem des absoluten Raumes und seine Beziehung zum allgemeinen Raumproblem. Braunschweig: Vieweg. 1911. Pp. 154.

Pacheu, J. L'espérance mystique et l'activité subconsciente. Paris: Perrin. 1911. Pp. 314.

Yerkes, Robert M., and Watson, John B. Methods of Studying Vision in Animals. *Behavior Monographs*, Vol. 1, No. 2. Boston: Henry Holt & Company. 1911. Pp. iv + 90. \$1.25.

NOTES AND NEWS

THE *Journal* of the American Medical Association has published a statement regarding the number of students at the German universities, from which we take the following figures: The largest number seems to be under the faculties of philosophy, philology, and history, in which the registration amounts to 16,158, as compared with 15,475 last year. Registration in medicine is next in number, totaling 11,927 (last year 10,862). Then follow law, 11,023 (11,323); mathematics and natural science, 8,442 (7,937); evangelical theology, 2,825 (2,507); political economy and agriculture, 2,729 (2,406); Catholic theology, 1,834 (1,840); dentistry, 1,046 (1,264); pharmacy, 916 (1,147); forestry, 170 (123); veterinary surgery, 160 (141). Of the present student body 28,981 are enrolled at the ten Prussian universities, as compared with 27,577 in the summer of 1910. At

the three Bavarian there are 9,445 (last year, 9,369); at the two Baden, 5,532 (1910, 5,279), and in the other six state schools, including the imperial at Strasburg, there are 13,222, as compared with 12,602 in 1910. The university of the metropolis stands at the head, having at present 8,039 students, including 695 women, as compared with 7,902 and 626 last year. All the universities except Giessen have gained this year, most markedly Griefswald, Kiel, Rostock, and Halle, and least Heidelberg, Münster, and the three Bavarian universities.

THE third season's investigations, conducted at Avebury by the British Association under the superintendence of Mr. H. St. George Gray, commenced in April last. The results of the work supply further corroboration of the conclusions already arrived at that the "temple" dates from the Neolithic stone period. This is shown by the discovery of two worked red-deer antlers, a finely chipped flint knife, and fragments of prehistoric pottery. This last is formed of a coarse, thick black paste containing grains of various substances introduced to bind and strengthen the ware, such as pieces of burnt bone and tiny bits of charcoal. Its chief interest lies in the fact that it is ornamented on both faces, the impressions of twisted grass, or cord, and finger-nails being clearly defined. This pottery was found about $5\frac{1}{2}$ feet below the surface. At a lower depth, but still below the Roman stratum, another form of vessel was discovered, ornamented in a herring-bone pattern, which was impressed by means of a notched implement of wood, bone, or antler, or by a shell with its natural ribbing. This pottery is identical with specimens found in the West Kennet long barrow, at Peterborough, on the Thames at Mortlake, and in General Pitt-Rivers's excavations at Handley, North Dorset. The date of the Avebury circle seems to be definitely fixed by these discoveries.—*Nature*.

THE seventh International Congress for Criminal Anthropology will be held in Cologne from the 9th to the 13th of October. At this convention there will be an exhibition of objects of importance for criminal psychology, such as models of punitive institutions, apparatus for the examination of sick prisoners, literary and other work of prisoners, instruments employed for breaking out of jail, etc. The secretary of the congress is Dr. Brüggemann, Cologne, Psychiatrische Klinik—*The Nation*.

PROFESSOR HANS DRIESCH's essay "Die Biologie als selbständige Grundwissenschaft und das System der Biologie," almost entirely rewritten, has appeared in a second edition (Leipzig: Wilhelm Engelmann, price 1.20 marks). The book is issued as "Ein Beitrag zur Logik der Naturwissenschaften," and is a clear statement of the value of the interaction of philosophy and biology.—*Nature*.

FIFTEEN essays and addresses, delivered before more or less popular audiences by William James during the last years of his life, have been collected, under the title "Memories and Studies," and are to be issued by Longmans, Green & Co.—*The Nation*.

DURANT DRAKE, Ph.D. (Columbia), has been appointed instructor in philosophy at the University of Illinois.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE PRESENT SITUATION IN THE PHILOSOPHY OF MATHEMATICS¹

PHILOSOPHIC controversy is not always an organized warfare. It is hard to get our two opposing armies to face each other squarely on definite lines and to join issue until one side or the other has to yield. The situation is often like that of a civil war carried on through guerrilla raids. Each side sallies forth into the enemy's fields of experience, captures whatever it can carry away; and if any stubborn fact shows the least resistance, it is ruthlessly put to fire and sword. To help bring about a condition of more orderly and scientific warfare, a series of new military charts might be useful.

The following is offered primarily to outline the military geography of a distant province of the philosophic kingdom—the field known as the philosophy of mathematics; and if the author occasionally puts himself on the firing-lines, it must be remembered that military charts are not prepared by neutral civilians.

I. WHAT IS PURE MATHEMATICS?

Until very recently philosophers generally assumed it to be the science of quantity or magnitude; and magnitude was defined as that of which we can predicate the relations of equality, greater than, or less than (*cf.* Grassmann's "Ausdehnungslehre von 1844," p. 7). But the rise of distinctly non-quantitative mathematical sciences, like the theory of groups, projective geometry, or analysis situs, has rendered the necessity for a new definition imperative. One of the first, and to mathematicians most satisfactory, attempts to meet this need is that of Papperitz in the first volume of the *Jahresberichte* of the Deutsche Mathematiker Vereinigung. "The subject-matter of pure mathematics," he says, "consists of the *relations* that can be established between any objects as contained in an *ordered manifold*" (p. 36) (*italics mine*). Excepting, however, Pro-

¹ Read at the Princeton meeting of the American Philosophical Association, December 28, 1910.

fessor Royce, who has on various occasions endeavored to bring out the general significance of a similar definition by Mr. Kempe,² this mode of defining mathematics does not seem to have received any philosophic attention. There is, however, another way of defining mathematics, and that is as a certain method of knowledge. This seems to be more inviting to philosophers with a limited knowledge of mathematics. For apparently one has only to get hold of the first piece of available mathematical knowledge, and, by subjecting it to a careful logical analysis, arrive at the essence of mathematical method. Accordingly, theories as to the nature of mathematical knowledge are too numerous to be the subject of a profitable review on this occasion. It will, however, help to clear up the situation if we point out that the actual progress of mathematics in the nineteenth century has rendered two widely popular views as to the nature of mathematical knowledge definitely untenable. These views are perhaps best represented by Mill and Schopenhauer, respectively. The first maintains that mathematical knowledge is empirical, inductive, and, therefore, essentially inexact. The second admits it to be deductive but maintains that it is incapable of genuinely extending our knowledge.

Mill's position seems to follow from his nominalism. Assuming that only particular physical objects are real, it follows that if mathematics is to be true knowledge it must be of such actual objects as physical squares, physical circles, etc. And as nature does not contain any perfectly straight lines or perfect circles, and as we can not even imagine such entities,³ mathematics can be only a greater or less approximation to (an otherwise essentially unknowable) physical truth. This would logically lead to the startling result that the more accurate our mathematical methods, the more inaccurate our knowledge of geometric objects. Now whatever plausibility such views may have received from the methods of the infinitesimal calculus prevailing in Mill's day, this can no longer be maintained in view of the increased rigor now prevailing in all branches of mathematics. Mill's contention that even arithmetical truths are contingent, and that in some other universe $2 + 2$ might not equal 4, can now be shown to be utterly devoid of any meaning.⁴

² Kempe's theory was developed in a series of papers in the *Proceedings and Transactions of the Royal Society* (1885 and 1887), but put in less technical form in *Nature*, Vol. 43 (1891), p. 156 f.

³ Even pure mathematicians like Cayley have remarked that if we had no idea of perfect straightness we never could pass judgment on any particular line and say, This is not perfectly straight. See Cayley's "Presidential Address before the British Association"; *Works*, Vol. XI., p. 432-3.

⁴ For the slipshod character of Mill's mathematical logic see Professor W. R. Smith in *Proceedings Edinburgh Royal Society*, Vol. VI., p. 477.

Schopenhauer starts from the assumption that "reason can not actually extend our knowledge, but can only give it another form" ("World as Will," etc., Ch. I., p. 18).

This principle, of course, is shared by many others. Schopenhauer, however, has the courage to carry it to its logical conclusion, viz., that "the differential calculus does not really extend our knowledge of the curve," but that it only transforms what we already know by intuition. Now no one who has ever used the methods of the differential calculus in the solution of actual problems need have the absurdity of this position pointed out to him. Students of mathematics know of numerous instances where analytic methods enable us to discover not only new properties of curves, but even such as on grounds of intuition would seem utterly impossible. To take only one example. It had always been supposed—and on grounds of intuition nothing seemed more certain—that any element of a continuous curve could be extended to form a tangent. But by purely analytic methods Weierstrass discovered a whole host of continuous functions which have no derivatives at all.

It seems, then, to be established that mathematics is both deductive and productive. The tremendous extension of mathematical knowledge in the nineteenth century has gone together with an ever increasing demand for logical rigor, so that a mathematician like Benjamin Peirce does not hesitate to begin his famous memoir on "Linear Associative Algebra" by defining mathematics as "the science which draws necessary conclusions."⁵

By combining the logical movement in mathematics with the generalizing movement in logic, a school of mathematicians, whom I shall call neo-Leibnitzians, are able to maintain the thesis that the whole of pure mathematics is nothing but a development of symbolic logic.

This position has been vehemently attacked from different quarters, but as far as I know, no one has tried to meet the works of Peano, Pieri, Frege, or Russell on their own ground, or has shown the inadequacy of the laborious chain of reasoning by means of which their thesis is established. The opponents of this thesis are satisfied with firing one volley, the query: How can logical principles, which are purely analytic, be productive of genuine novelty or progress in knowledge? Now the way the question *How can?* is used in philosophy as an argument is really scandalous. Suppose a chemist can not answer the question, How can hydrogen and oxygen possibly combine to form a third something utterly different from either?

⁵ *American Journal of Mathematics*, Vol. IV., p. 97. Similarly Dr. Whitehead, "Mathematics in its widest signification is the development of all types of formal necessary deductive reasoning" ("Universal Algebra," Vol. I., p. vi).

Would that excuse us from recognizing the *fact* that, after all, they do so combine? It would seem that when the fact is established that purely logical principles do produce ever new series of true propositions, the question should be not, How *can* they? but How *do* they do so? Be that as it may, we find the problem of "the new" in mathematics officially handed over by the mathematicians to the philosophers as *the* fundamental problem of a philosophy of mathematics.⁶

Approaching the problem from this point of view, we find three types of explanation for the apparent paradox that mathematical knowledge is both deductive and productive.

1. *The Empiricist Explanation.*—Admitting that the body of mathematical science is deductive, modern empiricism maintains that the whole is founded on axioms which are the result of experience. It would take us beyond the limits of this paper to discuss the interesting and important question as to the nature of mathematical axioms; but it is necessary to point out the prevalent confusion between the axioms of mathematics and the so-called axioms of geometry. The latter are genuine hypotheses, the subjunctive clauses of mathematical arguments. Hence we may suppose them not to be true, and deduce genuine consequences from their falsehood. This, however, is not true of the general axioms of mathematics. So far as we can see, no exact or demonstrable reasoning of any kind can be carried on without at least some of them.

Even if we grant that the axioms of mathematics are hypotheses which we are free to make or not according to the system which we want to derive, this would not explain the magic potency by means of which a small number of apparently simple and innocent propositions can produce what Professor Keyser calls the "continent of mathematical doctrines," a continent so extensive that no man since Gauss has ventured to explore the whole of it. The popular conception of the relation between axioms and the propositions which follow from them seems to go back to St. Thomas Aquinas, who holds that axioms are the germs from which the body of knowledge develops.⁷ But in spite of the fact that this view is espoused by such a careful investigator as Frege, it can not be regarded as more than a metaphor which fails to explain anything.

⁶I refer to the preface to the first volume of the "Encyklopädie der Mathematischen Wissenschaften" (p. xxvi), where the editor, Professor Meyer, says: "Möge die Encyklopädie, die die mathematischen Erfindungen eines Jahrhunderts in historischer Entwicklung vorführt, auch das erkenntnistheoretische Studium der grundlegenden Frage, was in der Mathematik denn eigentlich als 'neu' zu gelten habe, beleben!"

⁷"Præexistunt in nobis quædam semina scientiarum," "Quæst. disp. de ver.," 11, 1. Similarly Frege, "Grundlagen der Arithmetik," p. 101.

The suggestion that mathematics is actually developed by induction and that the deductive arrangement is simply a reconstruction, would not, even if it were true, obviate the difficulty. For reconstruction, whatever its nature may be, is obviously a construction of some sort, and we are still left with the difficulty of how a deductive procedure can be in any way productive.

2. *The Kantian Explanation.*—The question we are asking is precisely the question which Kant faced when he insisted that mathematical judgments are synthetic *a priori*. Kant defended the synthetic character of mathematical judgments against both Hume and Wolff, and tried to save their *a priori* character by deriving them from the *a priori* intuitions of time and space. Being debarred by various metaphysical considerations from entertaining the possibility of a purely intellectual intuition, these *a priori* intuitions could for Kant relate only to the matter of sensibility. It is a mooted question whether Kant means that mathematical demonstration, as such, depends on intuition, or whether he means that the axioms or basis from which mathematical demonstration proceeds depends on intuition. Philologically there would seem to be no reason for doubting the first interpretation, but in the interest of Kantian apologetics the second has been brought forward.⁸ Neither interpretation, however, makes Kant's position really tenable. The progress of mathematical logic and the complete triumph of the movement known as "the arithmetization of mathematics," have forever discredited the view that mathematical demonstration differs from other forms of demonstrative reasoning by some peculiar dependence on the intuition of time and space. The proposition which Kant uses as an example to show that mathematical judgments are synthetic, viz., $7 + 5 = 12$, is, as Couturat has amply demonstrated, a purely analytical proposition,—if by analytic we mean demonstrable by purely syllogistic reasoning.⁹

Similarly has the rise of non-Euclidean geometry rendered untenable the view that we have an *a priori* intuition that objective space is Euclidean. It is true that there are not wanting those who argue that non-Euclidean geometry "goes to bear out Kant's theory rather than the reverse." "For he admits [?] that many geometries are possible *logically*, i. e., geometries working out the consequences of various hypotheses; all that need be asserted is that for us to tell with any certainty which is the geometry of actual space, we must have an *a priori* intuition of space."¹⁰ This argument, however, is

⁸ L. J. Russel, *Mind*, Vol. XVII., p. 321 sqq. Cf. Medicus, "Kant und die nicht-euklidische Geometrie"; Natorp, "Die logischen Grundlagen der exakten Wissenschaften."

⁹ "Les principes des mathématiques," pp. 255-6.

¹⁰ L. J. Russel, *Mind*, Vol. XVII., p. 330.

based on two assumptions, viz., (1) that we *do* know with absolute certainty that "actual" space is Euclidean, and not, for instance, Riemannian; and (2) that the only ground for such certainty can be an *a priori* intuition. Both of these assumptions are entirely unwarranted.

Our physical experience, of course, entirely agrees with, and thus bears out, the Euclidean system; but all empirical results can be interpreted equally well in terms of a non-Euclidean system. Cayley and Klein have shown that the differences between the Euclidean and the two classical non-Euclidean systems are entirely metric and depend on our definition of distance, and Whitehead has given us an elegant proof that if any one of these systems is true, the others must necessarily be true likewise.¹¹ There is, therefore, as much sense in saying that we have an *a priori* intuition that space is Euclidean, as that we have an *a priori* intuition that space follows the decimal rather than the duodecimal system. The best we can say is that *at present* we find the Euclidean system most convenient. We know nothing, in spite of the high authority of Poincaré, which could prevent us from supposing that the growth of optics, astronomy, or other branches of physics might produce a situation which will make Riemannian geometry the more convenient.¹²

The argument that the Euclidean geometry is the only one which we can represent in intuition has no basis other than the fact that most of us happen to have been taught the Euclidean system in our school days. Indeed, if we disregard analytical considerations, and judge the matter from the point of view of what is possible in intuition, the Lobatchevskian geometry would be the only one that would commend itself.¹³ It is interesting to note, in passing, that the professed neo-Kantians in mathematics (Hermann Cohen, Natorp, etc.) have really been forced to give up the whole doctrine of intuition as the productive agency in mathematics.

¹¹ "Universal Algebra," art. 262. Cayley's views are put in popular form in his "Presidential Address before the British Association," but are mathematically developed in his "Sixth Memoir on Quantics." Cf. Klein, "Die nicht-euklidische Geometrie."

¹² Cf. Bôcher's address in *International Congress of Arts and Sciences*, Vol. I., p. 464.

¹³ Thus if through a point O , outside of a line XY , a line AB be revolved, it will generally intersect the line XY in some point to the right or left of P , the foot of the perpendicular. Now so long as we are restricted to finite spaces, there is always an angle between the last position of AB in which it intersects XY on the right and the first position $A'B'$ in which it intersects XY on the left of P . This angle BOB' decreases as our space increases; but for any finite space, no matter how large, there always is such an angle. The Lobatchevskian geometry simply asserts that there is such an angle—no matter how small—for the whole of space.

3. *Poincaré's Explanation.*—A more modern attempt to explain the fruitfulness of mathematical reasoning is that of Poincaré, who finds it all due to the principle of mathematical induction. This principle of mathematical induction is undoubtedly of wide application, though there are many regions even in arithmetic where it is difficult to see its application, *e. g.*, the science of prime numbers, a science dealing entirely with non-recurring individuals. But the important thing to observe is that this principle of mathematical induction is entirely different from the induction that prevails in the physical sciences.

What, may we ask, is the essence of induction as practised in the physical sciences? Clearly it is, that in the presence of the empirical observation that all x 's are y 's, we find an hypothesis A is B , such that, if A is B , it follows that all x 's are y 's. The Mendelian hypothesis as to heredity will illustrate this as well as any other hypothesis. Now it is well known that in the physical sciences the known facts are never sufficient to establish the hypothesis, in accordance with the simple logical principle that from the fact that, if A is B , it follows that all x 's are y 's, we can not reason that if all x 's are y 's, A is B . Physical experience, then, can never prove our hypothesis. It can, however, by turning up some x that is not a y , disprove our hypothesis. Now this is not the case in mathematics, for mathematical reasoning is frequently reversible, *e. g.*, if Euclid's postulate be true, then the sum of all the angles of a triangle is two right angles, but we can also reason that if it is established that the sum of the angles of a triangle is two right angles, then Euclid's postulate is true. But in any case it is absolutely certain that if a proposition is established by mathematical induction, it will never be disproved, *i. e.*, if a *general* proposition is true of $n + 1$ whenever it is true of n , and also of 1, then no possible number can arise of which this proposition is not true, for the principle of mathematical induction is used in defining all finite integers. Whether, therefore, we agree with Russell and call the principle of mathematical induction a definition, or concede to Poincaré that it is a special axiom, a synthetic proposition *a priori*, the fact remains that reasoning from it is a purely deductive procedure.¹⁴

¹⁴ It is of course true that many theorems in mathematics are *discovered* inductively, but they are never admitted as mathematically valid unless deductively demonstrated. Thus for over two thousand years before Lindeman in 1880 definitely proved π to be transcendental, mathematicians were unable to derive a rational value for π . Some took the pains to show that π could not be expressed in decimals of over 700 places. Yet this latter fact was never held to be mathematically sufficient to establish the transcendental character of π . So, also, it was nearly 100 years before Fermat's theorem that $2^{2^x} + 1$ is always prime was shown to be false (through Euler's discovery of 4,294,967,297 as

There are two assumptions common to all those who deny the possibility of obtaining genuine knowledge by deduction, viz.: (1) that all deductive reasoning is based on the syllogism and can, therefore, give us nothing but a bare series of identities or tautologies, and (2) that experience is the sole source of truth.

That demonstrative reasoning is not necessarily syllogistic is a thesis which students of logic know to have been successfully maintained against the Aristotelians since the days of Lorenzo Valla, Guelinckx, and the Port Royal Logicians. More particularly, that geometric demonstration is not necessarily syllogistic was shown with great force by Cournot (in his "Essai sur les fondements de nos connaissances," T. II., Ch. 16). Whatever objections we may have to modern symbolic logic or logistics, no one can deny that it has established beyond doubt that the syllogism is only one of a number of the principles of demonstrative reasoning; and, moreover, that even the syllogism itself can not be reduced to the principle of identity, that is, the syllogism is more than a bare assertion that *A* is *A*, but is itself a synthetic process.

This brings us to the second point, viz., the doctrine that experience is the sole ground of truth. The term experience as generally used is one of those terrible monsters that, having swallowed up everything, has ceased to have any definite form or outline. As used, however, by the philosophers we are discussing, Kant, Poincaré, and the empiricists, experience obviously means something other than mathematical reasoning,¹⁵ and in this sense the doctrine is demonstrably false. Mathematical reasoning gives us truths if anything does.

Take the standard and much-abused syllogism, Socrates is a man, all men are mortal, therefore Socrates is a mortal. This is usually employed as an example to prove that the syllogism can not give us new truth. For, it is argued, how could I ever know *all* men to be mortal unless I previously knew Socrates to be mortal? Hence it is concluded that the syllogism is simply a case of *petitio principii*. It is to be observed, however, that this argument assumes that a universal proposition can never be established except by a previous

divisible by 641), and yet at no time during the interval between 1637 and 1732 was this theorem properly a part of mathematical science—simply because no deductive derivation of it had been offered. The truth seems to be that induction is simply more or less systematic guesswork. Mill's well-known inductive methods serve only to eliminate various hypotheses, and thus help us to hit upon the right one; but there can not, in the nature of the case, be any such thing as an inductive proof.

¹⁵ Thus Kant explicitly denies that thinking is an experience. See his profound but, because of its brevity, much-neglected essay, "Ist es ein Erfahrung das wir denken?"

serial knowledge of all possible instances. This, of course, would render all knowledge of universal propositions forever impossible. Yet one can not consistently deny the possibility of knowing universal propositions, for the assertion that no universal propositions are knowable would itself be a universal proposition. It would seem, then, that it is logically impossible for *all* knowledge to be the result of induction (*i. e.*, of a procedure from particulars to universals). Some knowledge, then, must be the result of deduction.

To the question, then, How can reason give us knowledge? we might answer simply that it does, and that there is no valid reason to suppose that it can not do so. We may, perhaps, indicate our answer more positively by saying that reason gives us knowledge in the same way in which ordinary sense perception does so, by presenting an object to us. A series of syllogisms involves a series of perceptions on our part. The *therefore* of each syllogism expresses a perceived fact, viz., that the third proposition or conclusion follows from or is implied by the two premises.¹⁰ This is just as much an ultimate fact as that a particular object looks red or tastes bitter. If my neighbor can not see the redness of apple, or taste its bitterness, there can be no further argument on the matter between us. Neither can there be any further argument between us if he can not see that the propositions, Socrates is a man, and, All men are mortal, imply, Socrates is mortal.

It can not be too rigidly insisted that this fact of logical sequence or implication is not equivalent to the truth of the two premises; for the premises might be false, yet the fact of implication, viz., that they do imply the conclusions, would still be true. Thus most respectable people always have believed that some men, like Elijah and other Biblical heroes, are not mortal; and Semitic scholars at least would not be surprised if some one were to prove that Socrates was not a man but a solar myth; but we can not allow any member of the intellectual kingdom to question the fact that, granted the two premises, the conclusion must follow.

It is to be observed that this fact of implication is just as objective as the facts asserted by the two premises. For it is because of the relation between the two premises, and not from the reasoner's arbitrary fiat, that the conclusion follows. The assertion that propositions are mental would not help us any, for it is obviously not true that any two propositions will imply a definite third proposition. It is because of what the propositions assert that the conclusion follows.

¹⁰ I use the word *implication*, in this discussion, in its wide and popular sense, and not in the narrower technical sense employed by Russell.

On the other hand, it is equally true that in the apprehension of this simple fact we do not use our sense organs in the same way as we do in the apprehension of physical entities. Every one knows, or ought to know, that if we take the three numbers 105, 252, and 273, the sum of the squares of the first two will equal the square of the third; or that if in a Euclidean space I construct a triangle with its sides respectively 105, 252, and 273 units of any kind, the angle opposite the last side will be a right angle. It is doubtful whether any one ever constructed just such a triangle, and if any one ever did, it would have no bearing on the question. A simple process of reasoning assures us of the truth of this fact in a way in which no amount of physical observation and experiment ever could.

It may be asserted that reasoning itself is a kind of experience, and with this I have no quarrel, provided we recognize it as a kind of experience different from sense experience. The important thing is to beware of the utterly unfounded and pestiferous dogma that reality can be apprehended only through sense perception, a dogma as gratuitous as would be the assumption that all reality is audible, or that all reality is odorous. *The fundamental paralogism of all modern empiricistic systems is the argument that because I can not by pure reason apprehend particular sensible existents, therefore all reality is sensational.* I can not through my sense of sight apprehend the hardness or softness of things, but this does not prove that all reality is tactile, or that colors and other visible realities are non-existent. Through the senses we apprehend one kind of reality and through reason another. Perhaps if we had other organs we might apprehend other kinds or aspects of reality. Human experience, however, functions with these two, and the effort to eliminate from it either the sensible or the intelligible reality is no less ridiculous than the effort to make an army march exclusively with the left or exclusively with the right foot.

The tendency, then, of the newer philosophy of mathematics is to explain the fruitful character of pure mathematics by pointing out that implications are a species of facts as objective or independent of our individual psychology as any of the facts of physics, and that demonstrative reasoning consists of a series of intellectual intuitions or apprehensions of these facts. This also explains the fact that creative genius seems to be necessary to bring about a substantial widening of any field of mathematics. The creative mathematician is the one who has a genius for dealing with our particular species of facts, the ability to grasp long chains of reasonings in their entirety, and the intellectual imagination to anticipate results which less gifted minds reach only by painfully treading every step.

If this view has no other merit, it can certainly claim the one that

it enables us to avoid that wilderness of controversy, Are mathematical judgments synthetic or analytic?

II. HOW IS APPLIED MATHEMATICS POSSIBLE?

The second fundamental problem of any philosophy of mathematics is to explain how mathematical reasoning can give us knowledge of the external world—in other words, how applied mathematics is possible. Here again we must not let difficulties of explanation blind us to the certainty of the fact. On any theory we must admit that I can shut myself in my room and, by reasoning from the known density of iron, predict the exact number of seconds it will take for a sound to be transmitted through an iron bar or wire of any length; or, by a few observations on Polaris, tell exactly where and when the sun will rise in a particular locality.

On the view that reasoning is merely a mental process, controlled simply by psychologic laws, the question arises, Why does nature obey the results obtained by following these laws of thought?

The three answers which have prevailed in this field are empiricism, transcendental idealism, and pragmatism.

1. The answer of empiricism, so far as men like Mach and Kirchhoff meet this question, is that an applied mathematical science like mechanics is simply a convenient description of phenomena, and the process of reasoning, through equations and the like, simply gives me back what I put into it in the shape of the results of observation and experiment. But this account, strictly adhered to, would make mathematical reasoning useless as a method of extending our knowledge of nature.

2. It is one of the assets of transcendental idealism that it faces this question squarely and gives a definite answer. My reasoning, it says, is able to anticipate nature because nature, after all, is the product of reason—not, indeed, of my individual reason, which is subject to error, but of the absolute reason. Now the nature of the absolute reason or will, and its relation to the empirical self or will, are questions which take us beyond the limits of a philosophy of mathematics. The mathematician must be content with entering a warning that on any metaphysics the laws of mathematics can be no more subject to our empirical will than are physical laws, that the laws of convergent series are no more constituted by our mind than the laws of moving bodies.

3. In speaking of the answer of pragmatism to our present problem, I refer to the view of Poincaré. The distinctive feature of this view is the large rôle given to hypotheses which are merely conventions, and the suggestion that mathematical doctrines are conventional tools for organizing the facts of experience. Mathematical

reasoning holds true of the external physical world because that mode of reasoning which enables us to deal most conveniently with physics has been selected by the process of evolution from the different forms of thinking potentially existing in our minds. The legitimate question, then, according to Poincaré, is not whether Euclidean geometry is true, but whether it is convenient.

In spite of Poincaré's marvelous power of lucidity, the metaphysical bases of this doctrine are essentially obscure. He seems to maintain an agnostic realism—insisting that we can not know the nature of things themselves, but are limited to a knowledge of their relations. He does not explain to us, however, how we can know the relations between things by any principle like mathematical induction, which is based on the mind's ability to intuit its own power.

The answer that seems to me to be suggested by the progress of mathematics itself, is that the relational structure which is the object of mathematics is just as objective—whatever that may mean—as the physical terms related. The laws of mathematics are the laws according to which objective mathematical realities can be combined.

Infinite confusion has resulted from the fact that the laws of logic have been spoken of as the laws of thought. If the laws of thought mean the laws according to which Jones and Smith and others actually think, in those rare moments of their lives when they do, it is hard to see what such psychologic laws have to do with logic. Jones reads Hertz's "Mechanics" and finds it dull and unintelligible. Smith reads it and is charmed to find that he comprehends it in a flash. Neither of these facts, though descriptive of the character of Jones's and Smith's thoughts, has anything to do with the logic of Hertz's "Mechanics"—no more than the question of the stimulants or opiates which Hertz must have used to keep his thoughts on his beautiful demonstrations and to overcome the painful consciousness of the disease which was dragging him to an untimely grave. These considerations are obvious enough, and yet the prevailing tendency is to regard logic as a part of psychology, and to view mathematical operations as merely mental.¹⁷

There is, of course, another sense in which the laws of logic are spoken of as the laws of thought, viz., as the laws according to which we ought to think if we are to apprehend the real world. The astounding fact, however, is that even the three traditional so-called laws of thought which adorn our logical text-books say nothing at all about thought, but rather make affirmation of existence: whatever is,

¹⁷ Thus Lipps ("Grundzüge der Logik," p. 2) argues that logic is part of psychology "as surely as knowledge occurs only in the psyche." One might as well argue that astronomy is part of physiology "as surely as vision occurs only in or through the eye."

is; nothing can both be and not be; everything must either be or not be. Would it not be better to call these the invariant laws of being or existence?¹⁸

Instead, therefore, of assuming an alogical nature which somehow or other obeys laws in somebody's mind, would it not be simpler to start from the observed fact that the laws of logic and mathematics do hold of nature, and proceed to inquire what are the other characteristics of nature which follow from or are connected with this fact? Such a procedure involves what the critical philosophy calls dogmatism, viz., the assumption that we do have knowledge. But readers of the history of philosophy know that two such widely different thinkers as Fries and Hegel were each able to point out that the critical philosophy itself is not free from that assumption.

This is not the place to develop the metaphysic that results from such a system, but it is obvious that a view that regards the world of nature as composed of real terms and real relations between them can be neither a chopped up atomism nor a dull monism.

The assumption that numbers and mathematical or logical laws are mental is due to the even more wide-spread notion that only particular sensible entities exist in nature, and that relations, abstractions, or universals can not have any such objective existence—hence they are given a shadowy existence in the mind. But this is a shabby subterfuge: for these numbers or relations are also *numbers and relations of things*, and any assertion with regard to these abstractions is either true or not. Now truth, whatever it is, is not a quality which inheres in a proposition simply because it is mental, but a proposition is true because of factors other than the fact that I now think this proposition. If, therefore, abstractions had no existence except in the mind making them, no assertion into which they entered could possibly be true—except the assertion that I now think such and such a proposition.

The vulgar prejudice against the reality of universals is really due to the fact that we can not point to them and say: *here* they are—that is, they can not be localized in space. But for that matter, neither can our civil rights, our debts, or philosophic misunderstandings and errors; and yet no one has seriously doubted the real existence of the latter. The truth seems to be *that there are different kinds or modes of existence*. But on pragmatic grounds, at any rate, there seems to be no reason why ratios, percentages, or velocities should be considered any less real than the bed-posts or tables which are held up to us by ungenerous brethren as the only genuine types of existence.

¹⁸ This point is vigorously made by Professor Woodbridge in his paper on "The Field of Logic," *International Congress of Arts and Sciences*, Vol. I.

Let me add a note of confession which perhaps others also might make if they had as little philosophic pride. For several years I have been trying to find out the exact issue between recent idealism and realism, but without avail. Each side seems to me to claim that the other side stands for something which the other side vehemently denies. Each side succeeds in cornering the other when the other isn't there. When, however, I reread my Plato, I find that the differences between him and Protagoras are still the deepest differences which divide philosophers. According to Protagoras¹⁹ we get all of our knowledge through the senses, and thus know things only as they affect us; hence we can not assert the reality of universals, and, therefore, no objective science. The significance of Plato in the history of philosophy is his attempt to disprove every one of these Protagorean propositions; and to my crude mind the fundamental difference among philosophers in our own day is still the question, Plato or Protagoras?

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BRIEF STUDIES IN REALISM. II

EPISTEMOLOGICAL REALISM: THE ALLEGED UBIQUITY OF THE KNOWLEDGE RELATION

AT the close of my previous paper¹ I pointed out that if perception be treated as a case of knowledge, knowledge of every form and kind must be treated as a case of a presentation to a knower. The alleged discipline of epistemology is then inevitable. In common usage, the term knowledge tends to be employed eulogistically; its meaning approaches the connotation of the term science. More loosely, it is used, of course, to designate all beliefs and propositions that are held with assurance, especially with the implication that the assurance is reasonable, or grounded. In its practical sense, it is used as the equivalent of "knowing *how*," of skill or ability involving such acquaintance with things and persons as enables one to anticipate how they behave under certain conditions and to take steps accordingly. Such usages of the term are all differential; they all involve definite contrasts—whether with ungrounded conviction, or with doubt and mere guesswork, or with the inexpertness that accompanies lack of familiarity. In its epistemological use, the term

¹⁹ I refer to the Platonic Protagoras and not to the historical one. The latter may, for all I know, have been what Gompertz represents him to have been.

¹ This JOURNAL, Vol. VIII., No. 15, p. 393.

"knowledge" has a blanket value which is absolutely unknown in common life. It covers any and every "presentation" of any and every thing to a knower, to an "awarer," if I may coin a word for the sake of avoiding some of the pitfalls of the term consciousness. And, I repeat, this indiscriminate use of the term "knowledge" is absolutely unavoidable if perception be regarded as, in itself, a mode of knowledge.² And then—and only then—the problem of "the possibility, nature, and extent of knowledge *in general*" is also inevitable. I hope I shall not be regarded as offensively pragmatic if I suggest that this undesirable consequence is a good reason for at least not accepting the premise from which it follows unless that premise be absolutely forced upon us.

At all events, upon the supposition of the ubiquity of the knowledge relation in respect to a self, presentative realism is compelled to accept the genuineness of the epistemological problem, and thus to convert itself into an epistemological realism, getting one more step away from both naïve and naturalistic realism. The problem is especially acute for a presentative realism because idealism has made precisely this ubiquity of relationship its axiom, its short cut. One sample is as good as a thousand. Says Bain: "There is no possible knowledge of a world except in relation to our minds. Knowledge means a state of mind; the notion of material things is a mental fact. We are incapable even of discussing the existence of an independent material world; the very act is a contradiction. We can speak only of a world presented to our own minds."

On the supposition of the ubiquity of the relation, realism and idealism exhaust the alternatives; if the relationship itself is a myth, both doctrines are unreal because there is no problem of which they are the solution. My first step in indicating the unreality of both "solutions" is formal. I shall try to show that *if* the knowledge relation of things to a self is the exhaustive and inclusive relation, there is no intelligible point at issue between idealism and realism; the differences between them are either verbal or else due to a failure on the part of one or other to stick to their *common* premise.

I

To my mind, Professor Perry rendered philosophic discussion a real service when he coined the phrase "ego-centric predicament." The phrase designated something which, whether or no it be real in itself, is very real in current discussion, and designating it ren-

²As I suggested in an earlier article, "Some Implications of Anti-intellectualism," this JOURNAL, Vol. VI., p. 477, the conception of the ubiquity of the knowledge relation in all that has to do with a self is one of the things included in the term intellectualism, when that is taken in a pejorative sense.

dered it more accessible to examination. In terming the alleged uniform complicity of a knower a predicament, it is intended, I take it, to suggest, among other things, that we have here a difficulty with which all schools of thought alike must reckon; and that consequently it is a difficulty that can not be used as an argument in behalf of one school and against another. If the relation be ubiquitous, it affects alike every view, every theory, every object experienced; it is no respecter of persons, no respecter of doctrines. Since it can not make any difference to any particular object, to any particular logical assertion, or to any particular theory, it does not support an idealistic as against a realistic theory. Being a universal common denominator of all theories, it cancels out of all of them alike. It leaves the issue one of *subject-matter*, to be decided on the basis of that subject-matter, not on the basis of an unescapable attendant consideration that the subject-matter must be known in order to be discussed. In short, the moral is quite literally, "Forget it," "Cut it out."

But the idealist may be imagined to reply somewhat as follows: "If the ubiquity were of any other kind than of precisely the kind it is, the advice to disregard it as a mere attendant circumstance of discussion would be relevant. Thus, for example, we disregard gravitation when we are considering a particular chemical reaction; there is no ground for supposing that it affects a reaction in any way that modifies it as a chemical reaction. And if the 'ego-centric' relation were cited when the point at issue is something about one group of facts in distinction from another group, it ought certainly to be canceled out from any statement about them. But since the point at issue is precisely the statement of the most universally defining trait of existence as existence, the invitation deliberately to disregard the most universal trait is nothing more or less than an invitation to philosophic suicide."

If the idealist I have imagined making the above retort were up in recent realistic literature, he might add the following argument *ad hominem*: "You, my realistic opponent, say that the doctrine of the external relation of terms expresses a ubiquitous mark of every proposition or relational complex, and that this ubiquity is a strong presumption in favor of realism. Why so uneven, so partial, in your attitude toward ubiquitous relations? Is it perchance that you were so uneasy at our possession of an ubiquitous relation that gives a short cut to idealism that you felt you must also have a short cut to realism?"

If I terminate the controversy at this point, it is not because I think the realist is unable to "come back." On the contrary I stop here because I believe (for reasons that will come out shortly) that

both realist and idealist, having the same primary assumption, can come back at each other indefinitely. Consequently, I wish to employ the existence of this *tu quoque* controversy to raise the question: Under what conditions is the relation of knower to known an intelligible and discussable question? And I wish to show that it is *not* intelligible or discussable if the knowledge relation be ubiquitous and homogeneous.

The controversy back and forth is in fact a warning of each side to the other not to depart from their *common* premise. If the idealist begins to argue (as he constantly does) as if the relation to "mind" or to "consciousness" made some difference of a specific sort, like that between error and fact, or between sound perception and hallucination, he may be reminded that, since this relation is uniform, it substantiates and nullifies all things alike. And the realist is quite within the common premise when he points out that every special fact must be admitted for *what it* is specifically known to be; the idealistic doctrine can not turn the edge of the fact that knowledge has evolved historically out of a state in which there was no mind, or of the fact that knowledge is even now dependent on the brain, provided that specific evidence shows them to be facts. The realist, on the other hand, must admit that, after all, the entire body of known facts, or of science, including such facts as the above, is held fast and tight in the net of relation to a mind or consciousness. In specific cases this relation may be ignored, but the exact ground for such an ignoring is precisely because the relation is not a specific fact, but the uniform presupposition of fact.

Imagine a situation like the following. The sole relation an organism bears to things is that of eater; the sole relation the environment bears to the organism is that of food, that is, things-to-eat. This relation, then, is exhaustive. It defines, or identifies, each term in relation to the other. But this means that there are not, as respects organism and environment, two terms at all. Eater-of-food and food-being-eaten are two names for one and the same situation. Could there be imagined a greater absurdity than to set to work to discuss the relation *of* eater *to* food, of organism *to* the environment, or to argue as to whether one modifies the other or not? Given the premise, the statements in such a discussion could have only a verbal difference from one another.

Suppose, however, the discussion has somehow got under way. Sides have been taken; the philosophical world is divided into two great camps, "foodists" and "eaterists." The eaterists (idealists) contend that no object exists except in relation to eating; hence that everything is constituted a thing by its relation to eating. Special sciences indeed exist which discuss the nature of various sorts of

things in relation to *one another*, and hence in legitimate abstraction from the fact that they are all foods. But the discussion of their nature *an sich* depends upon "eatology," which deals primarily with the problem of the possibility, nature, and extent (or limits) of eating food in general, and thereby determines what food in general, *überhaupt*, is and means.

Nay, replies the foodist (realist): Since the eating relation is uniform, it is negligible. All propositions that have any intelligible meaning are about objects just as they are as objects, and in the relations they bear to one another as objects. Foods pass in and out of the relation to eater with no change in their own traits. Moreover, the position of the eaterists is self-contradictory. How can a thing be eaten unless it *is*, in and of itself, a food? To suppose that a food is constituted by eating is to presuppose that eating eats eating, and so on in infinite regress. In short, to be an eater is to be an eater of food; take away the independent existence of foods, and you deny the existence and the possibility of an eater.

I respectfully submit that there is no terminus to such a discussion. For either both sides are saying the same thing in different words, or else both of them depart from their common premise, and unwittingly smuggle in some other relations than that of food-eater between the organism and environment. If to be an eater means that an organism which is more and other than an eater is doing something *distinctive*, because contrasting with its other functions, then, and then only, is there an issue. In this latter case, the thing which is food is, of course, something else besides food, and is that something in relation to the organism. But if both stick consistently to their common premise, we get the following trivial situation. The idealist says: "Every philosophy purports to be knowledge, knowledge of objects; all knowledge implies relation to mind; therefore every object with which philosophy deals is object-in-relation-to-mind." The realist says: "To be a mind is to be a knower; to be a knower is to be a knower-of-objects. Without the objects to be known, mind, the knower, is and means nothing."

Our result is that the difficulties attending the discussion of epistemology are in no way attendant upon the special subject-matter of "epistemology." They are found wherever any reciprocal relation is taken to define, exclusively and exhaustively, all the connections between any pair of things. If there are two things that stand solely as buyer and seller to each other, or as husband and wife, then that relation is "unique," and undefinable; to discuss the relation *of* the relation *to* the terms of which it is the relation, is an obvious absurdity; and to assert that the relation does not modify the "seller," the "wife," or the "object known," is to discuss the

relation of the relation just as much as to assert the opposite. The only reason, I think, any one has ever supposed the case of knower-known to differ from any case of an alleged exhaustive and exclusive correlation is that while the knower is only one—just knower—the objects known are obviously many and sustain many relations to one another that vary independently of their relation to the knower. This is the undoubted fact which is at the bottom of epistemological realism. But the idealist is entitled to reply that the objects in their variable relations to one another nevertheless fall within a relation to a knower—that is, if that relation be exhaustive or ubiquitous.

II

Nevertheless, I do not conceive that the realistic assertion and the idealistic assertion in this dilemma stand on the same level, or have the same value. The fact that objects vary in relation to one another independently of their relation to the “knower” is a fact, and a fact recognized by all schools. The idealistic assertion rests simply upon the presupposition of the ubiquity of the knowledge relation, and consequently has only an *ad hominem* force, that is a force as against *epistemological* realists—against those who admit that the sole and exhaustive relation of the “self” or “ego” to objects is that of knower of them. The relation of buyer and seller is a discussable relation; for buyer does not exhaust one party and seller does not exhaust the other. Each is a man or a woman, a consumer or a producer or a middle man, a green-grocer or a dry-goods merchant, a taxpayer or a voter, and so on indefinitely. Nor is it true that such additional relations are borne merely to *other* things; the buyer-seller are more than, and other than, buyer-seller to *each other*. They may be fellow-clubmen, belong to opposite political parties, dislike each other’s looks, and be second cousins. Hence the buyer-seller relation stands in intelligent connection and contrast with other relations, so that it can be discriminated, defined, analyzed. Moreover, there are specific differences in the buying-selling relation. Because it is not ubiquitous, it is not homogeneous. If wealthy and a householder, the one who buys is a different buyer—*i. e.*, buys differently—than if poor and a boarder. Consequently, the seller sells differently, has more or less goods left to sell, more or less income to expend on other things, and so on indefinitely. Moreover, in order to be a buyer the man has to *have been* other things; *i. e.*, he is not a buyer *per se*, but *becomes* a buyer because he is an eater, wears clothes, is married, etc.

It is also quite clear that the organism is something else than an eater, or something in relation to food alone. I will not again call the roll of perfectly familiar facts; I will lessen my appeal to the

reader's patience by confining my reiteration to one point. Even in relation to the things that are food, the organism is something more than their eater. He is their acquirer, their pursuer, their cultivator, their beholder, taster, etc.; he *becomes* their eater *only* because he is so many other things. And his becoming an eater is a natural episode in the natural unfolding of these other things.

Precisely the same sort of assertions may be made about the knower-known relation. If the one who is knower is, in relation to objects, something else and more than their knower, and if objects are, *in relation to the one who knows them*, something else and other than things in a knowledge relation, there is somewhat to define and discuss; otherwise we are raising, as we have already seen, the quite foolish question as to what is the relation of a relation to itself, or the equally foolish question of whether being a thing modifies the thing that it is. And, moreover, epistemological realism and idealism both say the same thing: realism that a thing does not modify itself, idealism that, since the thing is what it is, it stands in the relation that it does stand in.

There are many facts which, *prima facie*, support the claim that knowing is a relation to things which depends upon other and more primary connections between a self and things; a relation which grows out of these more fundamental connections and which operates in their interests at specifiable crises. I will not repeat what is so generally admitted and so little taken into account, that knowing is, biologically, a differentiation of organic behavior, but will cite some facts that are even more obvious and even more neglected.

1. If we take a case of perception, we find upon analysis that, so far as a self is concerned in it at all, the self is, so to say, inside of it rather than outside of it. It would be much more correct to say that the self is contained in a perception than that a perception is presented to a self. That is to say, the organism is involved in the occurrence of the perception in the same sort of way that hydrogen is involved in the happening—producing—of water. We might about as well talk of the production of a specimen case of water as a presentation of water to hydrogen as talk in the way we are only too accustomed to talk about perceptions and the organism. When we consider a perception as a case of "apperception," the same thing holds good. Habits enter into the *constitution* of the situation; they are in and of it, not, so far as it is concerned, something outside of it. Here, if you please, is a unique relation of self and things, but it is unique, not in being wholly incomparable to all natural relations among events, but in the sense of being distinctive, or just the relation that it is.

2. Taking the many cases where the self may be said, in an in-

telligible sense, to lie *outside* a thing and hence to have dealings with it, we find that they are extensively and primarily cases where the self is agent-patient, doer, sufferer, and enjoyer. This means, of course, that things, the things that come to be *known*, are primarily not objects of awareness, but causes of weal and woe, things to get and things to avoid, means and obstacles, tools and results. To a naïve spectator, the ordinary assumption that a thing is "in" experience only when it is an object of awareness (or even only when a perception), is nothing less than extraordinary. The self experiences whatever it *undergoes*, and there is no fact about life more assured or more tragic than that what we are aware of is determined by things that we are undergoing, but that we are not conscious of and that we *can not* be conscious of under the particular conditions.

3. So far as the question of the relation of the self to known objects is concerned, knowing is but one special case of the agent-patient, of the behavior-enjoyer-sufferer situation. It is, however, *the* case constantly increasing in relative importance, and from both sides. That is to say, the connections of the self with things in weal or woe are progressively found to depend upon the connections established in knowing things: on the other hand, the progress, the advance, of science is found to depend more and more upon the courage and patience of the agent in making the widening and buttressing of knowledge a chief business.

It is impossible to overstate the significance, the reality, of the relation of self as knower to things when it is thought of as a *moral* relation, a deliberate and responsible undertaking of a self. Ultimately the modern insistence upon the self in reference to knowledge (in contrast with the classic Greek view) will be found to reside precisely here.

My purpose in citing the above facts is not to prove a positive point, viz., that there are many relations of self and things, of which knowing is but one differentiated case. It is less pretentious: viz., to show what is meant by saying that the problems at issue concern matters of fact, and not matters to be decided by assumption, definition, and deduction. I mean also to suggest, but only to suggest, what kind of matters of fact would naturally be adduced as evidential in such a discussion. Negatively put, my point is that the whole question of the relation of knower to known is radically misconceived in what passes as epistemology, because of an underlying unexamined assumption, an assumption which, moreover, when examined, makes the controversy verbal or absurd. Positively put, my point is that since, *prima facie*, plenty of connections other than the knower-known one exist between self and things, there is a context in which the "problem" of their relation concerns matters of

fact capable of empirical determination by matter-of-fact inquiry. The point about a difference being made (or rather making) in things when known is precisely of this sort.

III

That question is not, *save upon the assumption of the ubiquity of the knowledge relation*, the absurd question of whether knowledge makes any difference to things already in the knowledge relation. Until the epistemological realists have seriously considered the main propositions of the pragmatic realists, viz., that knowing is something that happens to things in the natural course of their career, not the sudden introduction of a "unique" and non-natural type of relation—that to a mind or consciousness—they are hardly in a position to discuss the second and derived pragmatic proposition that, in this natural continuity, things in becoming known undergo a specific and detectable qualitative change.

In my prior paper I had occasion to remark that if one identifies "knowledge" with situations involving the function of inference, the *problem* of knowledge means the art of guiding this function most effectively. That statement holds when we take knowledge as a relation of the things *in* the knowledge situation. If we are once convinced of the artificiality of the notion that the knowledge relation is ubiquitous, there will be an existential problem as to the self and knowledge; but it will be a radically different problem from that discussed in epistemology. The relation of knowing *to* existence will be recognized to form the subject-matter of no problem, because involving an ungrounded and even absurd preconception. But the problem of the relation of an *existence* in the way of knowing to *other existences*—or events—with which it forms a continuous process will then be seen to be a natural problem to be attacked by natural methods. The question of whether the knowing-event marks a qualitative distinctive difference in the career and destiny of things is a secondary matter; one that may be allowed to take care of itself, once the problem is shifted from the alleged epistemological relation to that of naturalistic existences.

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REVIEWS AND ABSTRACTS OF LITERATURE

Griechische Weltanschauung. MAX WUNDT. Leipzig: B. G. Teubner. 1910. Pp. iv + 130.

This is an interesting sketch of the Greek *Weltanschauung* conceived from the standpoint of a particular problem. Its motive is not historical

nor is it primarily concerned with philosophical theories. It aims rather to present the Greek *Weltanschauung* in its "inner unity," employing philosophical contributions only in so far as they lend themselves to this purpose. The successive chapters deal with the conceptions of nature, God, the destiny of man, society, and art, and the conclusion is drawn that the developments in these various fields must be viewed as characterized by a single tendency and not as isolated productions. This tendency in the Greek *Weltanschauung* centers about the problem of individualism, and it is the elaboration of this problem, the tracing of the dependence of the various conceptions upon this movement, which forms the main thesis of the book.

The chapter on nature traces the gradual establishment of two spheres of existence, the earthly and the godly, and points out the relation of these to each other. The abandoning of the mythological view of nature according to which man was one object among others entirely dependent upon external arbitrary forces, introduced the first step towards a scientific view of the world. This latter reached its climax in the mechanical theory of Democritus. But this achievement left no place for the element of value, the soul, the gods, and hence a further change was demanded. The reinstatement of the godly in the world was the task of Plato and Aristotle, and was most thoroughly accomplished in the teleological conception of Aristotle. But owing to ethical and religious motives, the original cleft between the earthly realm and the godly was broadened by later thought, until the only divine element which the earthly possessed was that of yearning towards God.

That there should have been a parallel movement in the changing conceptions of God would be expected. With the advent of the theory of the unity of nature, the gods of mythology were expelled from their old position, but continued to hold sway in popular belief. Philosophy identified the unity of nature with God, and added the qualification of individuality, personality. Then God was conceived to be separated from and above the world; and finally Greek speculation reached its highest point in this subject in identifying God with the moral law. In a sense this conception was a return to the mythological starting-point, since it reinstated God in the world.

The theories of nature and God are only reflections of the truly central question of the destiny of man. And here it is that the dominating characteristic of the problem of individualism is most forcibly exhibited. According to the mythological view of nature man was completely determined by extraneous powers. The conception of ethical nature begins with the recognition of a certain amount of human independence. Gradually the notion of individuality reached its extreme form which denied the existence of any objective standard for human action. With this climax individualism destroyed itself, since it reduced life to a series of momentary impressions and made the criterion of good immediate enjoyment. Then followed the reinstatement of objective law when the value of reason was recognized. Finally, thinking alone was conceived to be the ultimate end of man. In the Platonic and Aristotelian philosophy

this reason or thinking is identified with the longing or striving towards the godly whose nature is also thought. Thus we see the similarity to the early mythological view according to which the destiny of man was absorbed in that of the gods, but now we have added the content of individuality to the theory.

Consideration of the theories of society and art reveals the same tendency of individualism inspiring the variations in their fundamental conceptions.

The final chapter of the book is devoted to the relation between the Greek and Christian *Weltanschauung*. The author maintains that Christianity would never have spread among the Greeks if there had not existed strong tendencies to meet it. The naïve cultural life of the Greek people at its latest development had remained uninfluenced by the reflections of the philosophers and had continued under the control of the ideas of extreme individualism. Life regarded as a disconnected series of events, whose only significance was enjoyment, resulted in a sense of deep inner desolation. This outward life of the Greeks was the world to which Christianity appealed with its call to repentance, to inner conversion, and its promise of redemption. Also in the conclusions of the highest Greek speculations Christianity found a harmonious soil. For the ethical nature of man, according to Greek theory, was expressed in the striving or love towards God. Christianity is thus "the last and highest creation of the Attic spirit."

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Dogmatism and Evolution. THEODORE and GRACE ANDRUS DE LAGUNA. New York: The Macmillan Co. 1910. Pp. iv + 259.

Joint authorship is a dangerous thing, but in this instance it succeeds. There is a real unity in the book, although the authors, in their preface, set aside all claims to systematic unity.

The first half of the book is historical. By dogmatism is meant "the body of logical assumptions which were generally made by thinkers of all schools, before the rise of theories of social and organic evolution" (p. iii). Thus the seventeenth century is dominated by rationalism and mathematical method, and the early eighteenth by empiricism and psychology. To both points of view the evolution of truth is inconceivable; by both, a direct and infallible perception of truth is granted; both believe in the possibility of ultimate analyses into simple elements; and both tend to admit the externality of relations, although neither can then vindicate the reality of them. But the rationalist can never attain particular experience, and the empiricist never arrives at universals. Therefore the critical philosophy arises, of which the dominant note is a new conception of truth and validity. It culminates in the doctrine of Hegel—"the great liberator of human thought—if only, as many believe, to plunge it into a new slavery deeper than the old" (p. 86). But even this philosophy fails to bridge the cleft between the universal and the particular. "The growing pains of thought" (p. 108) that gripe the dialectic are, in the end,

futile; the necessary acceptance of an existing irrational introduces self-contradiction, and philosophy must again play the phenix.

All this is preliminary to the second and, to the reader versed in philosophy, more tempting part of the book, the discussion of "the pragmatist revolt." Pragmatism, the authors believe, is, in the main, sound. The text is limited to a discussion of theories of meaning and truth, together with implied concepts of reality. An appendix is added to discuss the pragmatic method, the will-to-believe, humanism, and immediatism. The text emphasizes the elements of truth; the appendix, the errors of the doctrine.

The weakness of pragmatism is that it is only half free from the tradition it repudiates. It should be more radical. For example, from the biological ethics of the last century is inherited the belief "that the whole utility—or, at least, the ultimate utility—of a newly arisen function consists in its supplementation of previously existing functions, *in the accomplishment of previously existing ends*" (p. 135). It would be too long a task in a review to discuss the elaboration of this point, but the reviewer suspects that some pragmatists, at least, would reply, that these limitations belong not to them, but to their fictitious Jekyllian double that critics love. Functionalism must be freed from immediatism; but the interpretation of immediatism, purportedly that of Professor Dewey, is not methodological, but of the dogmatic type the authors expressly seek to avoid. Many times pragmatism suffers from such superinduced determinations of meanings. Thus James is reproached (pp. 166–7) for saying, "To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve—what sensations we are to expect from it, and what reactions we must prepare," on the ground that "no objects can ever mean any *particular* sensations or any *particular* reactions" (*italics mine*). Or again, Poincaré is taken to task for not noticing that laws "are verified with *less* and *less* average inexactness as the conditions approach perfection" (p. 158)—a fact that, if true, would not necessarily modify his theory an iota.

It would be highly desirable for most readers that a chapter should be added to collect out of critical context the positive conclusions that are to make pragmatism a really radical philosophy. There seem to be such conclusions intended. From the "Excursus on J. S. Mill's Theory of Objectivity" we learn that sensations are only scientific constructs, and later (p. 245) that "the real . . . is never immediately experienced at all; it is only ideal." But either relations are experienced, or they are not. In the first case immediatism appears all over again, in the second we are back with Mill's mystery, so that the permanent achievement is not obvious. The possibility of interpreting relations in a new (pragmatic?) sense does not seem to have been considered.

Despite such limitations, however, the joint authors have acquitted themselves creditably of their task. Although the last part falls back lamentably into the slough of obscurantism, it has many excellent features, and the historical chapters are excellent and conceived with considerable

originality. In one respect alone the book is unfortunate—the printer was short of l's and i's. There is hardly a page without one to five of these useful letters missing or defective.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. June, 1911. *Scientisme et pragmatisme* (pp. 661–689): J. DE GAULTIER. — In spite of their obvious divergencies, empirical rationalism (scientism) and pragmatism really lead to certain identical conclusions which involve the ranking of sensibility below the level of scientific intelligence, and this is false. *Essai d'une classification des états affectifs* (pp. 670–704): E. TASSY. — There are emotions due to psychic activities, to mental activities, and to organic activities. *Les origines de la mort naturelle* (pp. 705–729): PLESNILA. — Death arises from the necessity that makes life produce ever new forms and individual variations. *Revue générale. La philosophie religieuse d'après quelques livres récents*: J. BARUZI. *Analyses et comptes rendus*. V. Bridou, *L'éducation des sentiments*: L. DUGAS. Richard Semon, *Die Mneme*: N. KOSTYLEFF. G. Heymans, *Die Psychologie der Frauen*: G. L. DUPRAT. Guido della Valle, *Le leggi del lavoro mentale*: FR. PAULHAN. Legrain, *Les folies à éclipses*: J. DAGNAN-BOUVERET. Brissot, *L'aphasie dans ses rapports avec la démence et les vésanies*: J. DAGNAN-BOUVERET. *Revue des périodiques étrangers*.

REVUE PHILOSOPHIQUE. May, 1911. *Une nouvelle hypothèse sur la biologie générale* (pp. 449–466): CH. RICHET. — Analogy points to the possibility of extending the laws of attraction of inert matter to include processes of living matter. *L'idée de l'inconscient et l'intuition de la vie* (pp. 467–493): A. JOUSSAIN. — We conceive an internal continuity to life because the past persists in the present through the Bergsonian real duration. *Recherches expérimentales sur l'attention (fin)* (pp. 494–520): REVAULT D'ALLONNES. — A continuation of the author's reports on disintegration of attention. *Revue générale. Travaux récents sur la philosophie des sciences*: A. REY. *Analyses et comptes rendus*. Parodi, *Le problème moral et la pensée contemporaine*: J. SEGOND. Th. Flournoy, *Esprits et Mediums*: G. L. DUPRAT. Dr. W. C. de Sermyn, *Contribution à l'étude de quelques facultés cérébrales méconnues*: DR. S. JANKELEVITCH. *Revue des périodiques étrangers*.

Ambrosi, Luigi. Ermanno Lotze e la sua filosofia. Parte prima. Milan, Rome, and Naples: Albrighi, Segati e C. 1912. Pp. xcvi + 334. L. 6.

Breitweiser, J. V. Attention and Movement in Reaction Time. *Archives of Psychology*, No. 18. New York: The Science Press. 1911. Pp. 49. \$0.75.

Outlines of Economics, Developed in a Series of Problems. By members of the department of political economy of the University of Chicago. Chicago: The University of Chicago Press. 1910. Pp. xvi + 144. \$1.00.

Strong, Edward K., Jr. The Relative Merit of Advertisements. *Archives of Psychology*, No. 17. New York: The Science Press. 1911. Pp. 81. \$1.25.

Wells, Frederic Lyman, and Forbes, Alexander. On Certain Electrical Processes in the Human Body and Their Relation to Emotional Reactions. *Archives of Psychology*, No. 16. New York: The Science Press. 1911. Pp. 39. \$0.40.

Whitley, Mary Theodora. An Empirical Study of Certain Tests for Individual Differences. *Archives of Psychology*, No. 19. New York: The Science Press. 1911. Pp. 146. \$1.25.

NOTES AND NEWS

PROFESSOR W. BOYD DAWKINS, F.R.S., delivered his presidential address to the Cambrian Archeological Association at Abergele on August 29, taking as his subject "Some Points in the Pre-history of Wales." In the course of his remarks, he said that at the time when the Neolithic aborigines first found their way so far west in the British Islands, the whole land was covered with forest, the lower portions of the valleys were filled with morasses, and the only tracks were those of the wild animals. The land was some 60 feet above its present level, and the coastline included the area of Anglesea. The Neolithic farmers and herdsmen were a small, oval-headed people, well formed, and had been clearly proved to be identical with the Iberian peoples of history. They were represented to-day by the small, dark element in the Welsh population. The next elements in the Welsh population were the taller, broad-headed people who lived in Wales in the Bronze age. Their civilization was derived from the Continent, and they were identified with the earlier division of the Celtic peoples, the Goidels, termed by Rhys the Q Celts. In the prehistoric Iron age a new civilization made its appearance. That, too, was probably introduced by invading tribes from the Continent, and these belonged to the Brythons, or P Celts, of Rhys. These represented the third element, and no new traceable element was added by the Roman occupation.—*Nature*.

WE have received the first two numbers of *Behavior Monographs*, which are published at irregular intervals at Cambridge, Massachusetts, in connection with the *Journal of Animal Behavior* by Henry Holt & Company, New York. The first number is "The Development of Certain Instincts and Habits in Chicks," by Frederick S. Breed, founded upon work done in the Harvard Psychological Laboratory. It is a work of 78 pages. The second is an inquiry into "Methods of Studying Vision in Animals," by Robert M. Yerkes and John B. Watson, and is a

report prepared for the Committee of the American Psychological Association on the Standardizing of Procedure in Experimental Tests. It comprises 91 pages. The separate numbers of the monographs are to be grouped in volumes of approximately 450 pages, and may be subscribed for at the rate of \$3.00 per volume (foreign subscription \$3.50). The enterprise is under the editorial direction of Professor J. B. Watson, of Johns Hopkins University, Baltimore, Maryland.

In the July number of *The Cairo Scientific Journal* Mr. J. Craig discusses some results derived from the anthropometrical material which he had previously investigated and published in *Biometrika*. The measurements dealt with 9,000 prisoners of Egyptian nationality, and were taken by the Anthropometric Bureau of the Ministry of the Interior from about 1902 to 1908. The relations of the Copts to the Moslem population, of the urban to the rural population, and of the people of Lower Nubia to the rest of Egypt, were studied, and though the data were not sufficient to support definite conclusions, indications were found of a differentiation into eastern, center and western delta districts; Girga and Qena provinces stood apart from Lower Nubia and Aswan on one hand, and from the rest of Upper Egypt on the other. The recent census is utilized to show the amount of migration of males from one province to another.—*Nature*.

THE Macmillan Company announces among their current publications "The Mind of Primitive Man," by Professor Franz Boas, of Columbia University; "The Five Great Philosophies of Life," by President William DeWitt Hyde, of Bowdoin College; "Truth and Reality," by Professor John Boodin, of the University of Kansas; "The Persistent Problems of Philosophy," by Professor Mary Whiton Calkins, of Wellesley College; "Social Pathology," by Professor Samuel G. Smith, of the University of Minnesota, and "The Meaning of Education," by President Nicholas Murray Butler, of Columbia University.

JOHN PICKETT TURNER, Ph.D. (Columbia), returns from a year spent at Vanderbilt University as assistant professor of philosophy to resume his work as instructor in philosophy in the College of the City of New York.

THE fifth annual meeting of the Italian Society for the Advancement of Science will be held in Rome on October 12-18, under the presidency of Professor G. Ciamician.

THE Japanese Minister of Education has announced that two new imperial universities will be opened. One will be at Sendai, on the eastern coast, and the other at Fukuoka, on the island of Kiushu.

PROFESSOR JOSIAH ROYCE is preparing a new volume, entitled "William James and Other Essays on the Philosophy of Life," which Macmillan hopes to issue this autumn.

LONGMANS, GREEN, & Co. will shortly issue "William James" by Emile Boutroux, translated by Archibald Henderson.

PROFESSOR JOSIAH ROYCE, of Harvard University, has received the degree of doctor of laws from the University of St. Andrews at its recent celebration.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE LOGICAL IMPLICATION OF MATTER IN THE DEFINITION OF CONSCIOUSNESS

THERE is a theory which relates consciousness and matter to each other as the opposite sides of a surface in relief. The objection to this "double aspect" theory that has weighed most, in criticism, is that the ground of the parallelism between convexity and concavity—to wit, a logical implication of each other—is obviously absent in the parallelism of consciousness and matter. Whatever parallelism experience actually finds between them is not deducible from either concept: there is nothing in the definition of the sensation blue to suggest an afferent nervous current; nothing in the latter to suggest a sensation. They are incommensurate. But when you conceive convexity, in that fact you conceive concavity also, and *vice versa*. They are related as plus and minus. The objection appeals to analysis of the definition of consciousness or of matter, or challenges the advocate of the theory to study his sensation or his neural process and see if there be anything in either of them to suggest the other.

A difficulty which immediately arises when this challenge is accepted has been understood to be decisive against the theory. It is this: Any definition of consciousness which the advocate of the theory may propose as the concept to be analyzed must, in order to fulfil the first requirement of logical definition, be in terms of that which is not consciousness. And this seems to the critic to beg the question. If you define consciousness so, he objects, you make its definition imply matter; but there is then nothing of consciousness in it; what you have got is only matter. That is to assume an equation between them. You state the value of x in terms of y , but then you haven't got x , but only y . It is otherwise with terms that really have the correlation you claim for consciousness and matter. Thus you can equate convexity with concavity in terms of either alone, as $m = - (-m)$. In this there is no assumption. But what

you say of x is that it equals ay , which is something *distinguishable* from x and whose equality to x is just the problem.

But if it be allowed that the disparity between consciousness and matter must be either a distinction between two kinds of reality, or else the distinction between being and not-being, the predicament just described is worse for the critic of the "double aspect" theory than for its advocate. If the distinction is that of being and not-being, whichever is not-being has an internal constitution and structure by virtue of which parts and relations are recognized within it: matter has physical laws and the interaction of bodies; consciousness has interrelated states. Not-being, so interpreted, is hardly distinguishable from being. And if the distinction is within being, and exhausts it, either the connotation of consciousness and that of matter are referable to each other—expressible in terms of each other—or else the distinction is only denotative, and they are not distinguished as *different*; for difference is a discursive relation between differents: *differing* from each other is a case of *referring* to each other.

Excessive emphasis on the "ultimateness" and "absoluteness" of the difference between these two concepts is just the inductive cue that results in the "double aspect" theory. No one can regard consciousness as not different from matter—least of all our critic, who finds them incommensurable. Nay, among real things that are *other* than each other, experience gives us no fellow to such difference; for difference so utter, they that differ should coincide. And so, in the fact of aspect, we have, indeed, in a thousand forms, disparity that matches the difference between the concepts now before us: *e. g.*, right, left; up, down; plus, minus; convex, concave.

We confess three obvious differences between the two equations which we have taken to represent our critic's conceptions of the relation of convexity to concavity and the relation of consciousness to matter. In equation (1), which is $m = - (-m)$, representing the former relation, the same symbol m stands on both sides; in equation (2) the symbols are different, x on one side, y on the other. In (1) the coefficient also is the same on both sides, namely, unity; in (2) the coefficients are different, unity on one side, a on the other. And in (1) the signs are opposite on the two sides, while in (2) the sign is the same on both sides.

What do these differences mean? To begin with, is (1) monomial and (2) binomial? No; in spite of the fact that there is only one symbol in (1), this equation is binomial in precisely the same sense as (2) is binomial; for it means that a certain attitude toward m , symbolized by the minus sign, transforms m into something *distinguishable from* m . If equation (1) expressed an identity, it would not represent the relation of convexity to concavity, which are not

identical but distinguishable. But what is thus expressed in (1) by difference of sign is expressed in (2) by difference of coefficient; for (2) means that a certain attitude toward the entity symbolized by x (an attitude symbolized by the phrase "divide by a ") transforms x into y . In short, the connotation differs, on the two sides, *in both equations alike*. But, on the other hand, the denotation is the same on both sides in each equation, for such is the nature of all equations, whether binomial or any other kind. Thus we have identity of denotation with difference of connotation in each of these equations, and they are so far homogeneous with each other. Now connotation is aspect, which is determined by subjective attitude; and attitudes are interrelated in determinate and accurately expressible ways; as, for instance, by antagonism or mutual exclusion, or by any of an indefinite number of forms of implication. The difference of attitude called antipodal oppositeness, or polarity, is the specific difference expressed in equation (1); whereas the coefficient a , in (2), expresses *mere* difference of attitude, difference in general, including, therefore, that specific difference which is expressed by opposition of sign. Thus equation (1) is a case of equation (2).

To sum up: The objection, stated in these algebraic symbols, was this: m implies $-m$; x does not imply y . Express the fact of relief in terms of m and you have the correlative fact in $-m$ implied in the very definition of m ; while, if you express x in terms of y , you have y values, and nothing but y . In short, x and y exclude each other; m and $-m$ imply each other. Our answer is that x implies y just as m implies $-m$; for ay is an aspect of the same denotation as x ; and, since the specificity of every aspect of a given denotation is determinable or definable by relation to all other aspects of the same denotation, any one of such aspects, as x , implies, in its definition, every other, and so y , instead of excluding y .

Turning from such abstract considerations to empirical study of the sensation, the same sort of difficulty reappears. We think we find a dynamic relationship of organic to extra-organic processes; this relationship presents a material aspect, which we call neural activity, and a formal aspect, which we call blue, for instance. But the critic objects that all this is much more than sensation, and that we have read our hypothesis into our data. We must keep to the pure sensation; in that, there is no neural process. So, even as, before, all our attempts to propose a definition of consciousness for analysis were ruled out as begging the question, now every sample of the experience to be observed is rejected as impure. There is no sensation that is pure in such a sense as our critic means, for he means subjectivity that implies no objectivity. If this is more than a word, it is a self-contradiction, since subjectivity is subjectivity only in the

fact of correlation with objectivity. Indeed, if our critic were to observe convexity as he proposes that we observe sensation, he would find no implication of concavity in it; nor would he find it convex. His observation would *be* the convexity; the two would coincide, and so would not be two. Convexity in its essence, as convex, would therein no longer be the object of the observation. You have to get outside of your convexity to observe it and its implication of concavity; just so, you have to get outside of your sensation to know it; in it, you know only the object of it. When convexity is said to imply concavity, convexity is just therein not "pure," as the sensation is supposed to be. "Pure" convexity, analogous to "pure" sensation or subjectivity, would be convexity without implication of concavity. That would be zero convexity, so to speak—a self-contradiction. Just so, the "pure" sensation, without implication of objectivity, is a fact of consciousness without the essence of consciousness, which is dynamic relatedness to an object. "Pure" consciousness is consciousness of nothing, or no consciousness.

If our critic have his way, we have nothing left us to discuss. Let us invite his attention to a discussable phenomenon of our own designating, and definable in some such way as this: the simultaneous belonging of an experience to an organism and to another material fact, say the sky. The two belongings are distinguished by a *sui generis* difference of direction or relational "sense," which unambiguously determines the organism to be the subject of the belonging, the sky the object. We have at least as good a right to call this phenomenon by the name of consciousness, or sensation, as our critic has to name that a sensation which he so defines that its definition is contradicted by the naming.

Now, experience is essentially dynamic, and, for an organism, to be active is to be functionally ordinated or focalized. For example, the eye and other parts may be subservient, in different ways and degrees, to the hand. Then the organism is focalized into an organ of touch, of striking, or whatever it may be. Every other function contributes as accessory to this primary function, in the organism's present phase.

We have called consciousness the formal aspect of activity, and we mean by "form" applied to activity what we mean elsewhere, determinateness or definableness. Here, in particular, it is that character that depends on resistance or reactivity. Activity without resistance would be without determination; its character or content would have vanished; it would be activity upon nothing, which, like consciousness of nothing, is nothing. So the resistance that factors in activity is not extraneous to the essence of activity, and consciousness and material processes imply each other not only with the same

logical necessity but with the same polar oppositeness of mutual relation, as the aspects of relief.

Consciousness is thus the inversion or reciprocal aspect of organic activity, virtual, in distinction from externalized or real, activity. Where attention is focalized, action is most resisted. As action approaches free vent, consciousness of the object of this free activity becomes more and more evanescent. At the limit where action is unresisted, it and consciousness go out, vanish together, in inverse "senses" or directions. Where action approaches "pure" (*i. e.*, unresisted) activity, pure positivity, pure subjectivity, consciousness approaches "pure" (*i. e.*, unreacting) passivity, pure negativity, pure objectivity. And such "pure" action and consciousness are pure nothing, action on nothing, sensation of nothing. The vanishing of the two relations together is, in each case, for lack of one of its terms, the term inverse to the term lacking in the other case.

This mutual symmetry between action and consciousness is the consequence of their identity of denotation and mutual inversion of aspect; and any study of the fluctuations and transitions of consciousness, with its modulations of attention and inhibition, is accordingly a study in inverse, a perfect logical function, of corresponding modifications of organic activity; for in the play of the organic functions we shall find incessant modulations between their focalization and their dispersion, incessant shifting of their mutual rank and of the position of primacy among them, to correspond with the changes between margin and focus that are always going on among the elements of consciousness.

The organism is structurally and functionally centralized in a sensori-motor system, where the afferent activity is opposed by the efferent, in a common focus, or in coincident foci, in which action and reaction give form to each other. Here organic reaction has its inception in a preformation, schema or design, as Bergson says, of the developed activity. An intricate manifold of functions are organized: interest determines the ascendancy or primacy of a certain one, while others are subservient, being inhibited or reinforced in varying degrees. The whole complex process has this character of focal, unifying organization, a unity expressed in opposite aspects as the simple form of activity, on the one hand, and as the simple object of perceptive consciousness on the other.

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DISCUSSION

A REPLY TO PROFESSOR DEWEY'S REJOINDER

MY purpose in replying to Professor Dewey's recent rejoinder¹ is to point out and, if possible, to remove the misunderstanding which I think he still has of what is at least the intent of the realist platform, especially as concerns procedure. Professor Dewey regards my previous reply as not having met his criticism, and now makes it his main point that questions of fact concerning the application of a proposition can not be decided from its implications. This, however, seems to me to have been only one of many points and inquiries which he made in his original criticism, although he did say that the main object of his discussion was "to protest against trying to reach results by the manipulation of a concept." But, however that may be, and whether or not Professor Dewey may regard my reply as having met the points he intended to raise, now that he has singled out one main question and has made quite clear that he means by manipulation "the deciding the application of a proposition from its implication," I am glad to reply to it alone, reformulating, in so doing, certain parts of my previous reply.²

I have reexamined the various statements of the platform, and can not find that any of these in its intent justifies Professor Dewey's interpretation or intimation that the realist would decide a "question of fact having to do with the application of a proposition from its implication" *provided* he *could* employ methods of observation and experimentation for deciding or helping to decide this application. Nor, more specifically, do I find any statement which seems to justify the criticism that the realist decides the application of the theory of "external relations" from its own implications or from its implications as applied in any specific case. But the platform may, of course, suffer from the ambiguous use of terms, or words, and this may be the source of Professor Dewey's misinterpretation. Indeed, I conceive his misinterpretation to be due to the way in which the word "term" is used in the platform and to the formulation of the theory of "external relations" to the effect, namely, that "in the proposition 'the term *a* is in the relation *R* to the term *b*,' *aR* in no degree constitutes *b*, nor does *Rb* constitute *a*, nor does *R* constitute either *a* or *b*." The platform contains other formulations of the theory, but this one might be misleading because of the word

¹ This JOURNAL, Vol. VIII., No. 3.

² The present reply also was submitted to the members of the group and received their general approval.

“term.” These formulations, however, state only the meaning of the theory for whatever instances it may be found to apply,—indeed, whether it applies to anything or not,—and make no assertion as to what terms in relation the theory does apply to, not even that it applies to the terms of a proposition in the strict sense of these words. “Term *a*” and “term *b*” are used as variables, *i. e.*, in such a way that there could be substituted for them any entities in relation for which relation the theory, as stated, is found empirically to apply. Such terms or entities might *a priori* be the terms of propositions, or propositions as wholes, or points, or instants, etc. To which of these the theory applies is to be determined by empirical investigation for each case separately and independently, and not by implication from one another; and the formulation of the theory, indeed the entire platform, allows for just this independent investigation. However, with this investigation once made, the result may, of course, be stated in the form of a proposition, with terms (*e. g.*, the point *a* is in the relation *R* to the point *b*), and yet the entities denoted may be anything whatsoever other than the terms (in the strict sense) of a proposition. They might be physical objects, mental states, numbers, atoms, etc. In this sense, then, anything whatsoever may be made the subject of an empirical investigation to determine what terms and relations are present, and whether the “external theory” applies or not; *i. e.*, anything whatsoever may be observed and reasoned about and the results be stated in the form of propositions, *i. e.*, judgments may be made, and inferences drawn from these, and the way thus opened up, perhaps, to new observations.

The realist would certainly agree, then, in general, with Professor Dewey’s contention that from the “implications of propositions questions of fact” can not be decided—provided, he would add, these facts are not themselves implied facts, or, if they are, provided there is another way of helping to decide them, namely, by observation or experiment of some kind. Sometimes, however, the only way of deciding certain facts, indeed of discovering them, is by implication from propositions applied on the basis of observation and experiment; and it is, of course, always quite legitimate procedure to develop these implications, confirming them, if possible, by observation and experiment. But Professor Dewey would undoubtedly quite agree with this. And yet he seems to be somewhat critical of the realist’s use of this procedure in certain cases, *e. g.*, in those in which, where by observation the theory of “external relations” has been found to be applicable, the implications from this application are developed—whether they are confirmed or not. In certain cases they are, in others they are not. To state certain re-

sults of this kind, namely, observed results with implied results which are confirmed, was also the intent of the platform, and to further explain this procedure was part of the purpose of my first reply. However, to further show just what, in our own minds, our procedure is, and to reply to Professor Dewey's recent inquiries quite succinctly, I will state on just what grounds the "external theory" is held to apply in each case.

The realist would distinguish a number of different types of empirical procedure and a number of different kinds of facts. That there are these seems to be a fact which is itself empirically established. Now among the different types of empirical procedure there are different kinds of observation and experiment, two at least; by one, sense observation and experiment, we get at the physical world; by the other, which, for want of a better name, I call ideal observation, we get at mental processes, and at more subtle, ethereal entities like numbers, possibility, infinity, etc. Professor Dewey, tacitly at least, accepts this second kind of observation; for in his position that the application of a position shall be decided by observation and experiment, he tacitly grants that such a subtle, diaphanous thing as the *applicability* of a proposition can be observed. The realist is quite in agreement with Professor Dewey in this respect; other than physical and mental entities can be observed. Furthermore, the realist also distinguishes different kinds of facts, such as observed and implied facts, physical, mental, logical, and mathematical facts, and, perhaps also as distinct from these, spatial and temporal facts. These facts are to be discovered, analyzed, and their relations to one another ascertained by any specific empirical method which proves efficient. In accordance, now, with these distinctions, the realist decides the application of the "external theory" in each specific case for which it has been asserted in this recent discussion to apply as follows:

1. By "ideal" observation and experiment the realist finds that the theory of "external relations" applies to that cognitive situation in which there is achieved knowledge of theories, of propositions, of numbers, etc.

2. By observation of, and perhaps also by experiment on, physical objects, the realist finds the theory to be applicable to that cognitive situation in which there is genuine knowledge of physical existents.

Comment.—The application in the first case may be said to make the second logically possible—to imply it; but the realist is of the opinion that this implied fact can be confirmed by observation, and so a direct as well as an implied application be established. But still the direct application, by observation and experiment, in the

second case is not so convincing as it is in the first, for the reason that on its basis it is *difficult to meet the contention of the idealist and phenomenalist that the so-called physical object known is in some degree constituted by or modified by the knowing*. This contention ought to be met and answered satisfactorily, and while I hold that the observational evidence establishes a presumption in favor of the validity of the "external theory" in this second case, I have, because of the retort to which it is open, emphasized the first case as a better means of getting hold of the idealist and the phenomenalist. I can observe quite empirically, it seems to me, their knowing of their own theory, and find that the "external theory" applies.

3. By observation of, and perhaps also by experiment on, mental events, the realist finds that the theory applies to that cognitive situation in which there is genuine knowledge of mental existents.

4. Making the distinction between judgment as the act of assertion and the proposition as the state of affairs asserted or the judgment-content, the realist finds that the "external theory" applies (a) to the relation of the terms (in the strict sense) of a proposition; (b) to the relation of a proposition to that to which it refers, whether this be existential or subsistential; (c) to the relation of propositions to one another.

5. By "ideal" observation and experiment the realist finds that the theory applies to the relations between those entities, *such as* intensity-points, space-points, instants, etc., which can not be directly observed physically, but which are implied by certain facts that are so observed.

There may be other cases of the applicability of the theory of "external relations," indeed it may be that it applies to all cases of terms in relation, and that the "internal theory" has no application. But realism is not concerned primarily with the question of the extensive or universal applicability of the "external theory," but only with its validity as respects the cognitive situation. In all of the above cases I should say that it is as much a matter of observation and perhaps also of experimentation that the "external theory" applies as it is a matter of observation and experiment that, for example, the law of inverse squares applies to celestial and molar phenomena, and to the phenomena of static electricity and magnetism (Coulomb's law), etc. Indeed, in the case of these phenomena, in whose investigation inductive, empirical methods are admittedly used, it is often said that the observed facts *imply* the law. Now it is a similar usage which I have sometimes made in saying that the cognitive situation implies or presupposes the theory of "external relations" in the case of knowing *quâ* knowing. This

usage may also have been a source of Professor Dewey's misunderstanding, and perhaps such usage is open to criticism. Indeed I think that some other word than "imply" might be advantageously used here, for this "imply" is different from the deductive "imply." But I have employed the term "imply" in just this sense, that one may say either that a certain law applies to certain phenomena, or, conversely, that the phenomena "imply" the law, and this is frequent usage. But if "imply" be used in this way, then our procedure is certainly quite different from that of deciding the application of a proposition from its implication—*provided* direct observational methods can be used to decide this.

To the other questions and statements of Professor Dewey's rejoinder I reply only that it may not be said that I am avoiding any issue raised therein. In reply to these I would say:

1. The mathematical physicist *does* decide by the *implication* of the (existential) propositions of mathematical physics "the scope and place in existence of the entities forming the subject-matter of this science," provided he can decide them in no other way. For example, such a method gives the greater part of the physics of the ether, and it is the only method which does. He decides these questions by physical experiment, or by experiment *and* implication where he can; but in case certain phenomena, discovered by implication, are not accessible to direct experimentation, they remain decided to a certain extent by implication. It is to certain ones of such implied facts, checked up only indirectly by experiment, that the realist by "ideal" observation finds the "external theory" applicable; he accepts them simply at their face value; they are implied existential facts.

2. I quite agree with Professor Dewey that the actual propositions of *mathematical physics* do not rest upon *purely* mathematical implications. Nowhere have I said, either directly or indirectly, that they do. Nor do they rest upon purely experimental inquiries into matters of fact. That which they do rest upon is both experimental inquiries and the use of implicative methods interwoven as closely as possible. That is why one can not argue from the biological, chemical, and physical properties of existence without considering also the implied existential properties.

3. Further, and with apologies to Professor Dewey for seeming to insist on that which he disclaims in his rejoinder, I must reply that the experimental inquiries which he emphasizes are themselves part of the subject-matter of genetic psychology—genetic at least in the broad sense—and that they must be so made is indeed a point of view which is at least implicitly taken by him in *his* view of the nature of that true knowledge to which such inquiries are held to lead.

Therefore, an inquiry concerning the extent to which the genesis of knowledge is relevant to its truth itself becomes relevant in a discussion with an opponent whose general philosophical position means that the truth of achieved knowledge can be defined only in relation to the prior inquiry, and to success, to satisfactoriness—*this all the more so* if it is claimed that “antecedently to any use of a concept of relations” it must be decided whether “knowing is a natural event” and, “if so, how it evolves out of other natural events.” *Why* this should be the case, and *why* we should *not* go ahead and make the question as to whether we can use “a concept of relations” in any case a question of fact to be decided by observation and experiment on the things to which we wish to apply the concept, I can not see, unless there is the wish to decide, from the implications of the proposition that “knowledge is a natural event,” something concerning the use of a “concept of relations.” But such a claim seems to me to contradict the main contention of Professor Dewey’s rejoinder regarding procedure, and yet it is a point which he insists upon in his original criticism. Further, while of course such a claim very evidently raises the question of procedure, it is direct evidence for me that that criticism was, as a whole, made from the standpoint of a philosophical position which may well be called broadly genetic. Nor has the rejoinder removed this conviction. For in this I again find evidence that Professor Dewey regards procedure and empiricism and fact in that more limited way which is characteristic of the pragmatistic and genetic standpoint, and in accordance with which there are *fewer types* of experimentation and observation and fact than the realist recognizes. So again I have found, since it is my purpose to argue and not merely to deny, that I must go beyond the merely explicit statements in Professor Dewey’s rejoinder and consider the more fundamental position upon which they are dependent. This I have done above, and such a procedure again appears to me, as it did in my original reply, quite pertinent to the discussion. However, my former reply did not purport to be only an answer to Professor Dewey’s criticisms; it had also the purpose of being an exposition, and of pointing out lines of possible agreement between the realistic and other positions.

In conclusion I would like to raise one more point, or, indeed, to make an inquiry, and this I would address to whomever it may interest rather than regard it as a further reply to Professor Dewey. My inquiry concerns, on the one hand, the problem of the relation of knowing *quâ* knowing to its object, and on the other, the question of procedure in attacking this problem. The problem and the solutions given to it form that which the realists as well as their critics have recognized as the pivotal question at issue between them, while the

further question as to what means shall be employed in attacking it is important, because no procedure has yet been suggested by any one which seems to be of the nature of a crucial experiment or to lead to a solution which is decisive and uniformly convincing. The problem has been narrowed down in the recent discussion between the realists and their critics to the more precise one of whether or not knowing *quâ* knowing modifies or constitutes its object, or, what is the same thing, what theory of relations applies to this situation; and, of course, if knowing does modify or constitute its object, there is the further problem as to the degree or extent of this "effect."

As concerns procedure in attacking this problem, there is to be found one party which insists that ordinary empirical methods not only are sufficient to solve it, but, indeed, are the only ones which can. Thus, by this party it is usually held, for example, that ordinary empiricism (in common sense and science) shows that any object known (or unknown) is independent of the knowing *quâ* knowing, although knowing may lead indirectly to experiment and so to change. But the objection to this procedure is that it is not crucial; evidence that it is not so is the fact that at least it does not satisfy or convince the idealist and the phenomenalist of the Kantian type, who calmly accept all ordinary empirical methods and results and fit them into their larger idealism and phenomenism without a murmur. Ordinary empiricism is, then, seemingly incapable of settling this knowing problem; for, seemingly, its results can be absorbed, and it offers no crucial observation or experiment by which to disprove either the idealist's or the phenomenalist's claims. But, on the other hand, neither does the idealist, nor the phenomenalist, nor even the pragmatist offer *any crucial observation or experiment* as a basis for his position, but only arguments. Phenomenism is based on the premise that knowing modifies or constitutes its object to a certain degree, idealism makes this "effect" either partial or complete, and pragmatism holds that "things undergo change in knowing"; but in each case the position is only argued and not established by a crucial observation or experiment. It may be, of course, that no such mode of establishment or of settling the question is possible; but, if this be the case, it is itself a fact of significance and should receive establishment.

With this the actual state of affairs, then, at the present time, *i. e.*, with each party unable to show decisively by a crucial observation or experiment either that knowing modifies or constitutes its object or that it does not, but able only to argue, the problem of procedure in attacking this fundamentally important problem of knowledge still remains. Is there, or is there not, a crucial experiment or observation by which it may be decisively shown either that knowing

modifies or constitutes its object or that it does not, and if it does, to what extent, and in what cases? And if there is not such an experiment, why is this so and what does it indicate? Is it because of the very nature of the problem? I simply wish to narrow down this question regarding procedure, and so I would respectfully address my inquiry to any and to all parties, and I make it in order to get information, and not to arouse controversy. I myself have used and stated what seems to me to be a crucial observation creating a presumption in favor of the position that knowing *quâ* knowing in no case modifies or constitutes its object. That is the observation of a philosopher's or scientist's knowing of his own theory—whatever this may be. But this observation of mine has been called dialectic, although to use this appellation constitutes imputation and not refutation. So I make appeal for an observation or experiment of another type, if there be such, which *shall be crucial* in nature, and be one which I can repeat, for this is the character of a scientific crucial experiment. If such an one can not be given, what does that indicate? Does it show that the problem is of such a character that it can not be solved in this way, but only by argument? If this be so, then let us find it out. For the purpose of thus narrowing down my inquiry, I request of the empiricist that observation and experiment—and not argument—which will show so decisively that knowing does not modify or constitute its object that there will be no chance for the idealist or phenomenalist to escape. Or of the idealist and phenomenalist I request that observation and experiment—and not argument—which will show decisively that knowing does modify or constitute its object, and *how much*. Or of the pragmatist who states, as does Professor Dewey, that “things undergo change in knowing,” I request the experiment and observation, physical, ideal, or what not, but in any case crucial, by which it may be shown that this change is universal for all things, or limited, and in either case *how much* the change is. For *either* universal, for all knowing, for all things, *or* limited it must be! In either case I ask for the crucial observation and experiment—and not argument—by which the universality *or* the limitation can be shown and the amount of the change determined approximately. And if in none of these cases the crucial experiment can be given, then I ask not only *why this* is so, but for that mode of procedure which *shall be adopted* in attacking the knowing problem, *and why*.

It does not answer my questions to say that experience alone solves them. And if the crucial experiment and observation can not be given by which the problem can be solved decisively one way or the other, then must we conclude that for the present the solution is only one of argument influenced by emotional bias and perhaps an

arbitrary use of some theory of relations? Indeed it is to put this alternative to the test that I formulate my request as I do—that I exclude argument and ask for observation and experiment crucial in character. Yet as concerns the outcome, should any one favor me with a response, and whether he cite the observation and experiment asked for, or avoid the issue by presenting only argument, I am confident, indeed I can now observe, that somewhere the principle that knowing *quâ* knowing does not modify or constitute its object will emerge supreme.

I have endeavored to answer the inquiries of Professor Dewey's rejoinder directly, and have done so in the sincere desire to make clear the realist's position, and so to further that agreement with which Professor Dewey in his original criticism acknowledges his sympathy.³ My final inquiry I make not so much by way of replying to him as to seek information concerning a problem of general interest.

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JOINT DISCUSSION WITH ARTICLES OF AGREEMENT AND DISAGREEMENT: PROFESSOR DEWEY AND DR. SPAULDING

PROFESSOR DEWEY and I have presented in the pages of this JOURNAL during the current academic year articles in discussion of the "Platform of Six Realists." That discussion might have been continued, at least with probable interest to ourselves, for some time by alternate articles of reply and rejoinder. But such a method might easily have involved the danger of a continually increasing mutual misunderstanding and misdirected emphasis. Accordingly, both to avoid this danger and to bring our discussion to a close, we have, rather than continue it by the usual journalistic methods, conferred and discussed in person the matters at issue. The results of our conferences, both agreements and disagreements, we offer as a close to our previous discussion. These results concern all but one of the main points raised in that discussion, including my last reply, the exception being my final inquiry concerning procedure in attacking the problem of the relation of knowing *quâ* knowing to its object. That question, however, I

³ Since this reply was written, Professor Dewey and I have held a number of conferences for the purpose of discussing the points at issue between us. We have preferred this method of verbal discussion to that of alternate reply and rejoinder. This reply was submitted to Professor Dewey, and the results of our conferences are published subsequently in this issue.

raised as one of general interest rather than by way of reply to Professor Dewey. The following are the results of our verbal discussion, "D. and S." showing agreement, single initials showing reservations, comments, etc.

E. G. SPAULDING.

1. Judgments may be a natural outgrowth of preceding natural events, and may lead to other natural events; but it is an empirical question as to what degree or in what respects they differ from other natural events. (D. and S.)

2. Judgments are things in course (form a mode) of discovery and of inquiry. They lead to "knowing" or an act of assertion. (D. and S.)

3. Judgments, as links in a causal or natural series of events, may change realities, or, through an intervening causal series, lead to changes in reality. (D. and S.)

4. A judgment terminates in a proposition, which is a subsistent and relational complex stating the truth about existents or other subsistents. (D.)

A proposition is a subsistent and relational complex stating the truth about existents or other subsistents. It is the content or "state of affairs" which the judgment asserts, or which is "known." (S.)

5. Judgments as related to entities existing or subsisting simultaneously with the knowing, or assertion, do not change the entities as known or asserted. (D. and S.) (See comments under 8.)

Comment (S.). This holds good in some cases also for entities existing either before or after the "knowing," and in all cases of subsistents.

6. There may be different types of subsistents, among which the proposition is one (type), and discrimination of the relative value or validity of these types may involve the question of the relation of propositions to judgments. (D. and S.)

Reservation (D.). In all cases the determination of the validity of the subsistent depends upon the connection of the subsistent with prior and subsequent inquiry, *i. e.*, upon the judgment series. There are differences in types of inquiry which control the differences of validity.

Comment (S.). In some cases, at least, subsistents are (found to be) independent of the inquiries in which they are discovered, for example, in the case of numbers.

7. Propositions do not modify entities to which they refer (of which they are propositions). (S.) (See 8.)

The subsistent which constitutes the subject-matter of a proposi-

tion does not modify any existent or other subsistent to which it may refer. (D.) (See 8.)

8. This whole situation concerning or involving observation, judgments, propositions, entities known, the relations between these, their character, etc., may itself be made the subject of special study and inquiry, and the result constitute or be the discovery of propositions to which 7 applies. (D. and S.)

Comment (S.). A. Not only does 7 apply to the results, stated as propositions, of the inquiry, but 4, 5, 6, 11, 13, and 14 also apply to these results in the respect emphasized by each of these statements, while 1, 2, 3, 9, 10, 12, and 13 apply to the process of inquiry into the situation under discussion. One may say either that the conditions which make inquiry into this specific situation possible, and the propositions which are discovered about it, must be presumed to hold good for any other specific inquiry whose purpose is to discover the truth, or one may state the presumption in the inverse order. Either statement is made simply in recognition of the demands of consistency.

B. In the case of "achieved knowledge" or "knowing," as an outcome of the process of inquiry, it is discovered that there is a distinction between (1) the knowing, as an existent, (2) the proposition, a subsistent, and (3) the entity, either existent or subsistent, which is known and to which the proposition refers. There is also a "knowing" of the proposition. Designating these three entities by *a*, *b*, and *c*, respectively, there are, then, three relations, *aRb*, *aRc*, and *bRc*, in which the terms, though related, may be different,—indeed, very different and independent. (Cf. 4, 5, 6, and 7, especially 5 and 7.) This means (1) that "knowing" does not modify or constitute either the proposition or the entity (cf. 4), and (2) that the proposition does not modify or constitute the entity or entities to which it refers,—briefly, that the theory of "external relations" applies to each of these three relations. The applicability or validity of this theory for these three relations is discovered by that observation which is made possible by making the judgment-proposition-observation situation itself an object of inquiry. (Cf. 9.)

Comment (D.). I hold that the process of inquiry and discovery which terminates in a proposition is necessary to the existence of the subject-matter or subsistent of the proposition. In holding that this prior process does not modify its own objective when reached, (i.) I also hold that "study and inquiry" show that the subsistent *is* the existent to which it refers, modified; that this particular sort of modification is just what is denoted by proposition, assertion, knowledge. The subsistent does not, then, modify the existent, for, being logical in status (see 14), it has no existential efficiency, but it *is* a

modification of a prior existent, through the entrance of this latter into a process of doubt-discovery, having for its objective the proposition. (ii.) While the subsistent does not modify, cognitively speaking, the existent to which it refers, the act of assertion, which is existential, operates to bring about a transformation into a more desirable form of the existent referred to. Thus indirectly, a proposition is a medium of a practical, non-cognitive alteration of the thing referred to in knowledge. Otherwise put, the term "thing" in relation to knowledge may denote at least three different matters: (i.) the existent referred to, or denoted; (ii.) the thing *as known*—the propositional subsistent which refers to the thing it is about or of; (iii.) the existent as finally determined through the actual working out of the act of referring the proposition to the thing to which it means to refer or apply. This gives the sense in which I understand 1 and 3.

9. The general method of inquiry consists of observation, experimentation, and inference in reciprocal support of one another, and the inference-judgment situation thus created may be enlarged by the observation or discovery of further implications which show the way to further new observations of "brute facts." Anything can be studied in this way—even the inference-judgment-proposition situation itself—judgments being formed (or occurring) in the course of the inquiry, and propositions being discovered as a result. (D. and S.)

10. There are different kinds of observation and, perhaps, also of experimentation. Thus relations of implication and implied entities and subsistents of different types may be as directly observed as are "brute" existential facts or entities. Some of these observations are made possible only in or through the inference situation, but, *quâ* observations, they are distinct from the inference process itself. (D. and S.)

11. Just as there are different kinds of observation, so there are different kinds or types of entities among both existents and subsistents. (D. and S.)

Reservation (D.). (*Cf.* 6.) In all cases of subsistents the validity or status of these entities depends upon the prior inquiry.

Comment (S.). It is discovered as a result of the inquiry that among both subsistents and existents there are certain types which are *independent* not only of the prior inquiry and of the process of discovery, but of one another; accordingly, not only might certain subsistents subsist, were there no existents, but both certain subsistents and existents might subsist and exist respectively without other types of subsistents and existents. This is but another way of saying that implication is limited by "brute facts," or that certain

entities are logically prior to others, *e. g.*, numbers to counting; *i. e.*, counting presupposes (or implies) numbers, but numbers do not imply counting—or, indeed, anything physical, mental, spatial, or temporal.

Comment (D.). As a result of inquiry, I do not discover that subsistents subsist apart from any existences. On the contrary (see my comment to 8) I think I discover that all subsistents are cognitive references to some existence. One subsistent is logically independent of another subsistent in the measure to which the existent to which one refers is existentially independent of the existence to which the other refers. A subsistent may be “logically prior” to another subsistent; but to speak of a subsistent or logical entity (see 14) being *logically* prior to an existent seems to me meaningless. It is either tautological, like saying that a logical treatment of a thing is a logical treatment of the thing it refers to, or else it confuses logical relationship with existential status. Counting is an act or event; it is existential; numbers are subsistents. Hence to talk about numbers being “logically prior” to counting is to treat counting as if it were one of the numbers. Correspondingly, it is absurd to say that counting is *logically* prior to numbers; for counting is a brute act, and hence, *quâ* counting, non-logical. One connotation or logical contact is logically prior to some others; denotation and connotation do not bear a logical relationship to each other.

12. There are other logical principles than those of inference in the usual and narrow sense of the term, *i. e.*, than the rules and principles of “immediate and mediate reasoning” and of “induction” as found in the text-books. Among these “other logical principles” are those which are involved in the logic of infinite series, of continuity, of relations, of mathematical induction, etc. Use of these enters into inference in a broader sense. (S.)

Comment (D.). I assent, with the restriction that the “usual sense” is purely conventional, and should be surrounded. In the proper sense of “inference” I find all logical principles to be involved in inference, in the sense of existing only because the fact of inference exists. (See 14, Comment, Dewey.)

13. Logic in this broader sense is nevertheless limited, *i. e.*, not all that exists or subsists is logical or, at least, completely logical. Connotation and denotation, then, are to be recognized as having each its proper sphere and limitation, and “denotative matters” can not be treated as connotative in the sense that the former ever lose their distinctly denotative character. The two supplement one another, and anything can be inquired into and so put into the denotative-connotative situation, or, rather, this situation can be found. (D. and S.) (Cf. 8 and 9.)

14. All entities, both existent and subsistent, are, however, partly logical in the sense that, while an alogical aspect may be distinguished, this aspect coexists or cosubsists with the logical in much the same way as do a relation and its converse. The particular existence or subsistence of any logical aspect or entity of a certain type is itself "brute fact," and, while it is to be discovered by any method which proves efficient for this, it exists or subsists independently of this inquiry and discovery. Entities, either those wholly or those partly logical, are not made logical by being taken into an inference-judgment situation of any type; but, on the contrary, they can be taken into this situation because they already are logical entities of some type and in some respect, one of the outcomes of the inquiry being the discovery of this "respect" and type. Then, since everything can be taken into the inference situation in some way, *i. e.*, can be reasoned about, everything is logical in some "aspect" and of some type prior to this "taking-in," though the discovery of the aspect and type be made by observation, with or without the assistance of inference methods. (S.)

Comment (D.). As a matter of discovery, I think I find that the existence of logical entities and of a process of inferential inquiry are one and the same thing. The process of inferential inquiry has its own characteristic or distinguishing marks, just like any other natural occurrence. Its peculiar marks are precisely those traits and relations that are called logical. This does not mean that they are constituted in the process of *their* being known. On the contrary, inferences, or existences having logical traits, must exist before they can be inquired into. When inquired into, the resulting proposition bears the same kind of relation to the existence it is about—or refers to—as any proposition sustains to the existence it is about. (I understand that here, as well as in 8 and 11, the difference between Dr. Spaulding and myself is one of fact; that is, it is a difference as to the state of things discovered upon inquiry. Hence my statements are not arguments against Dr. Spaulding's statements, but are reports of different findings.)

15. It is a consequence of *these results* (of making the judgment-proposition-observation situation itself a subject of inquiry) that the physical sciences, mathematics, logic, and metaphysics can be studied without the results of such studies or inquiries receiving a readjustment from so-called epistemology. This consequence is confirmed by observation of the history of science, mathematics, etc. (D. and S.)

REVIEWS AND ABSTRACTS OF LITERATURE

Swedenborg and the "Sapientia Angelica." FRANK SEWALL. New York: Dodge Publishing Co. 1910.

This is one of those excellent handbooks in that useful series of *Philosophers Ancient and Modern*. Like the volume on scholasticism, it is written by a partisan, but with much ingenuity and learning. In this case the ingenuity lies in the selecting of the parallels between the doctrines of the distinguished Swede and his successors, the learning in the attempt to interpret this eighteenth century system in the terms of the nineteenth century and after. Thus, in the chapter on cosmology and physics, the claim that Swedenborg anticipated Kant, Laplace, and others in the promulgation of the nebular hypothesis is upheld by so eminent an authority as Svante Arrhenius. Other Scandinavians likewise find "ideas belonging to the most recent times" in their compatriot's "wonder-book" the "*Regnum Animale*," but with less success. The claim, for example, of having given a complete theory of evolution is a palpable confusion between evolution in the literal sense and evolution in the present sense of epigenesis. Indeed the initial fault of the advocate is the attempt to read the present rather than the past into this Swedish system. Thus the "*Principia Rerum Naturalium*," beginning with its "First Simple" and its "First Natural Point" and concluding, "Composite things derive their origin from Simples, from the Infinite, and the Infinite from itself," all this seems merely a continuation of Descartes's "*Le Monde*," with the addition of Plotinus on the "Processes of Emanation." A similar criticism holds for the works dealing with physiology and psychology; there are both parallels with predecessors and a leaning towards the ancient mysticism. In the "*Animal Kingdom*" there is the same view as that of Hobbes as to corpuscular tremulation being the fundamental principle of the universe, and the same fallacy as to the process by which sensation becomes converted into imagination and idea. And with this "ultra-materialistic" view, with its futile search for the seat of the soul, there is conjoined a Leibnitzian forecast or conception of a society of immortal souls, and a Pythagorean interpretation regarding the harmonies between those souls.

Here the author asserts that "had Swedenborg's labors ceased at this point, the knowledge of the soul would have remained where his illustrious predecessors in these investigations, from Plato down, had left it, and where Kant, his contemporary, acknowledged it must be left forever so far as the power of pure reason is concerned—a sublime speculation without the elements of certainty and reality." How were these elements of certainty and reality to be attained? The avowed Swedenborgian says by a special, divine illumination vouchsafed to the head of the sect, who becomes henceforth the exponent of a philosophy no longer human but angelic. In this connection three dubious claims are made: that Swedenborg was a more logical guide than Kant in these transcendental paths; that his illumination is not to be identified with the immediate

knowledge of the Gnostics; and that, in this peculiar experience, there is nothing pathological. As to the first, it may be replied that the "angelic wisdom" which Swedenborg laid claim to was in the transcendent, not the transcendental, sphere, and the reason why Kant wrote his "Dreams of a Spirit-Seer" was not because he wished to cover his own "unmistakable borrowings" from the Swede, but because the latter was guilty of putting the supersensible in terms of the sensible; in fact, the Königsberger inveighed so strongly against the visualization of the moral law and the "exact material setting of the interior spiritual principles" precisely because it was a rank confusion of the noumenal and phenomenal. Secondly, that the "*Arcana Cœlestia*" is not to be identified with the various schools of theosophy and occultism is hard to grasp from the historical point of view. There are parts of this work that seem more like a return to the esoteric writings of the Neoplatonists than the "relations of 'things seen and heard' by a traveler returned from a hitherto unknown land." The only difference is that, while the Neoplatonists visualized with an Hellenic moderation and charm, Swedenborg's visions of purple angels and the white horse mentioned in the "*Revelations*" formed what Emerson once described as a sandy desert, entirely void of poetic expression. The third objection, that the "great transition," "the change of plane from material to spiritual realities," should be dismissed upon the "flippant assumption of lunacy" can be met, provided the critic be allowed to change the last offensive phrase to a serious assumption of the pathological. Psychologically, the visualizing power which made Swedenborg the mathematician he was, that same power, carried over into an imagined supersensible world, may be examined as a symptom of the abnormal. This is borne out by an unfortunate quotation from the "*Spiritual Diary*" as to the self-delusion of spirits: "It has been shown to me many times that spirits who spoke with me imagined that they were the men I was thinking of; nor did other spirits know otherwise. For instance, yesterday and to-day, one of them was so much like a person known to me in life, in everything (so far as I knew) pertaining to him, that nothing could be more like. Wherefore, let those who speak with spirits beware when spirits say that they are persons who are known to them, and that they are the dead."

This is the weak side of Swedenborgianism which, a generation ago, led its founder to be considered a spiritualistic medium and to-day, as the author unwittingly allows, "throws light on the problems of modern hypnotism, spiritism, telepathy, and like experiences." As the pathologist would find it hard to follow the sectary's statement that "for the first time appears a man who claims to have beheld with twofold vision the twofold universe," so the philosopher would scarcely agree to the statement that "probably no such complete survey of the whole realm of Being in a scientific form has ever been presented to rational contemplation." Swedenborgianism as metaphysics does not go beyond the metaphysics current two centuries ago. It consists of a triple dualism: in its cosmology between earth and heaven; in its anthropology between mind and body; in its psychology between intellect and will. The water marks

of the age being so evident, this can not be called an original document except in the terms of the lower criticism. Hence the hollowness of the claim of a truly new *organum* which constitutes Swedenborg's great contribution to philosophy, namely, his doctrine of influx, of discrete degrees and their correspondence. This triple claim needs analysis and rejoinder. That the cosmic principle is force, will, divine love emanating by wisdom into created spheres, is again a recrudescence of Neoplatonism; that these spheres are not a continuous plane, but in such degrees as to forbid the confusion of substance between spirit and matter, between God and nature, is merely a concession to Platonized Christian dogma; and, lastly, the doctrine of correspondences or the congruity between thought and things, between sense and symbol, partakes of the familiar habit of double interpretation set forth in the sixth book of the "Republic."

In connection with Swedenborg's lack of originality, the counter-claim of Emerson's similar defect may be met. It is true that to take from the New England transcendentalist the doctrine of correspondence would leave much of his writing dull and dark, but it is not true that this doctrine was derived from the learned Swede. The history of the Concord philosopher's relations to Swedenborg is briefly this: At the age of twenty-three he held that the Swedenborgian Sampson Reed's "Growth of the Mind" had the aspect of a revelation; ten years later he quotes from the *New Jerusalem Magazine* the striking statement that the visible world is the dial plate of the invisible, and praises the head of that church for having pierced the emblematic or spiritual character of the visible, audible, tangible world. But what he gave with one hand he took back with the other. In his "Journal," a few years later, he remarks: "The new light, brand new, of the Swedenborgians, is old as thought. I match every saying of theirs with some Greek or Latin proverb." Finally, in his "Representative Men" he offers that kindly yet humorous criticism of Swedenborg the mystic which the latter's followers usually fail to give in full. In this Emerson makes Swedenborg another example of the difficulty, even in a highly fertile genius, of proving originality. Among the reasons for this difficulty are his indebtedness to Lord Bacon in the teaching that truth and nature differ only as seal and print, and to Plato for the doctrine of correspondences which he carries to such extremes as to "make every hose fit every hydrant." Now this crucial doctrine of correspondences Emerson himself was cognizant of from his college readings of Cudworth's "Intellectual System of the Universe" and from the poetic symbolists of the older English lines like Quarles and Vaughan and Herbert. Indeed from these British sources it may be shown how Emerson, before ever he discovered the Americanized Swedenborgianism of Sampson Reed, was familiar with the essentials of Platonism—from the scale of being to the microcosm and macrocosm. So while he praises the Swede for "the thoughts in which he lived"—"the fine secret that little explains large, and large little, and the connection that subsists throughout all things"—he needs must add certain observations. Taking them up in the order of those controverted points which we have already noted, they are these: First, that Swedenborg is not a true transenden-

talist in the Kantian sense, but a believer in an identity-philosophy in whose universe "all the figures speak one speech, all the interlocutors Swedenborgianize." Second, that his angelic wisdom is not unique and peculiar to himself, but akin to that claimed by Socrates, Plotinus, Porphyry, Behmen, Bunyan, and Fox. Yet, in the third place, as to whether all this is the accompaniment of disease, he grants that it is hard to say. Swedenborg "admitted the perilous opinion, too frequent in religious history, that he was an abnormal person, to whom was granted the privilege of conversing with angels and spirits, yet modern psychology offers no similar example of a deranged balance; the principal powers continue to maintain a healthy action, and to a reader who can make due allowance for the reporter's peculiarities, the results are instructive. . . . Nevertheless there is a sandy diffuseness in the plain theologic Swedenborg; he is strange, scholastic, didactic, passionless; his hells are dull, his angels are country parsons, his heaven an evangelical picnic."

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William James. EMILE BOUTROUX. Paris: Libraire Armand Colin. 1911. Pp. 142.

It was from France that William James first received his philosophic inspiration, from France that he received his earliest recognition and his greatest honor. It is, therefore, right and fitting that the first book written in memory of him should be from the hand of a Frenchman. The author, M. Boutroux, is a friend of long standing, Mr. James's sponsor in the Institute. His book is a memorial of this fine friendship as well as an appreciation of genius. It is marked by the same perfect form, the same combination of subtlety and luminousness, which are the distinctive qualities of all its author's work. It is unusually happy in its appreciation of the master's personality, his traits, and his life. But finely sympathetic, delicately comprehending in this respect, it does not seem so adequate in its delineation of his philosophy. That, in its outline clearly grasped, expounded with the precision of method and language that are natural to M. Boutroux, nevertheless seems in some respect lacking; its essence seems somehow unrendered. The opinions are the opinions of James, but the spirit is the spirit of Boutroux. It carries a different connotation and opens other vistas.

That this should be so is no reproach to M. Boutroux. The artist inevitably represents himself much more than his subject, even in his most perfect work: the mind that tells the story and gives it life tends to dominate the facts that it narrates; it creates the values of these facts, establishes their center and order of preference. This is what I find in M. Boutroux's book—other values, unfamiliar values. There is no single statement that can be altogether denied, no one opinion that can not be attributed to William James, yet the whole does not seem like his philosophy. There seems to be a shift in emphasis and perspective—precisely where or how I can not easily say. I get the feeling of a dualism between the "inner life" and the outer, which I know to be important in the

thought of M. Boutroux, but which I know radical empiricism was meant to abolish. I get the feeling of the centrality of religion and religious experience, which I believe to have been, for James, marginal merely. He did not, after the ancient fashion of philosophers, make room for religion by a destructive and sceptical criticism of science, but sought rather to make it establish its own validity according to the methods and standards of science. The objectivity of the sciences and of psychology, far from depending on the objectivity of the religious experience,¹ are the measures of that. For the motives which led the master to the study of religion were scientific and humanistic. As he defended psychical research in the interest of justice and scientific fair play, so he dealt with religion. I can hardly believe, with M. Boutroux,² that it was science itself that James objected to, so much as the narrowness and intolerance that sometimes vitiate science and make it unreal. Nor can I assent to the interpretation which suggests the spiritistic hypothesis and a kind of mystical rationalism as being unforeign to the Jamesian insight. I can not agree that the essential idea of his metaphysics was "the identification of reality with largest, completest, profoundest, and directest experience," or that he ever would accept the existence, "behind the static reason of dialectic with its immutable categories, of a *reason* living and concrete, whose business is not with empty concepts, but with realities themselves, and envious, not only of unity, immutability, and necessity, but also, and above all, of free harmony and internal communion."³ This would indeed bring Mr. James, as M. Boutroux suggests, in line with the classic tradition, but no philosopher of this latter day, as Mr. Pitkin well pointed out, is so untraditional as William James. His note is truly a different note and a new note, far more so than even Bergson's, and it is significant of changes by the rest of the intellectual world still unfelt.

However, all this is ungracious and by the way. There will be as many interpretations of James's philosophy as there will be interpreters and each will necessarily be a different thing. It is a happy and fitting event that the first interpretation shall be the work of a scholar so profound, so understanding, and so sympathetic as M. Boutroux.

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Protestant Thought before Kant. ARTHUR CUSHMAN MCGIFFERT. New York: Charles Scribner's Sons. 1911. Pp. 261.

Dr. McGiffert has compressed within the limits of two hundred and sixty-one duodecimo pages a clear and penetrating account of the development of Protestant theology beginning with the Reformers of the sixteenth century and ending with the appearance of Immanuel Kant. The arrangement of the materials is as follows: after a short introduction there is one chapter on each of the four leading Reformers, Luther, Zwingli, Melanchthon, and Calvin—that on Luther being the longest and

¹ Cf. p. 93.

² Cf. p. 139.

³ P. 139. Italics mine.

analytically the most complete. Two important groups of Protestant radicals, the Anabaptists and the Socinians, are treated together in Chapter 6. Then follow two chapters of moderate length on the English Reformation and Protestant scholasticism respectively. Pietism receives more extended treatment, and the title is stretched so widely as to include the whole of English Evangelicalism and the Edwardean theology in America, as well as the German movement begun by Spener, which is Pietism proper. This is one of the best parts of the book. The chapter on Rationalism, which is much the longest, devotes especial attention to English Deism, but does not altogether neglect the kindred movements of thought in Germany and France. It closes with a short sketch of Unitarianism in America.

The author's task certainly was not easy. To follow across ten generations the currents of religious thought flowing through four of the greatest countries of the western world—and to do it within such brief compass—demanded historical knowledge and literary skill of a high order. Considerable omissions were imperative. The distribution of emphasis was a task both difficult and delicate. Through his judicious selection and arrangement of materials, our author has succeeded in producing an impression both of unity and of comprehensiveness, which is remarkable. Add to this the fact that the book is written in a simple, lucid, and vigorous style, and it is evident that we have before us what bids fair to become an exceptionally influential work in a difficult and poorly cultivated field.

Professor McGiffert's historical judgments exhibit his usual candor and discrimination, yet he makes no special effort to disguise his sympathies. He is unsparing in his exposure of what he regards as logical inconsistencies. Almost every one, except an occasional Deist, is "inconsistent." Luther and Melancthon,—Zwingli, Calvin, and Arminius,—the Anabaptists and the Socinians,—Wesley, Edwards, and Butler,—the Congregationalists and the Pietists,—all fall under the same condemnation. In view of the insignificant number of those who escape this censure, one might venture to doubt the validity, or at least the importance, of making logic the test of truth. And for one so deeply interested, as our author unquestionably is, in the application of religion to life, it would seem to be a fair question whether after all it is not better to be illogical, say, with John Wesley, than to be logical with Matthew Tindal. Even Lord Herbert, whom Dr. McGiffert so justly admires, once remarked of philosophy and logic, "I am confident a man may have quickly more than he needs of these two arts."

It is always hazardous to attempt to reformulate another's main thesis, yet the reader of this admirable little book may be tempted to reduce what the author calls "the medieval view" of religion to the simple statement that *God saves men*, and, in contrast with that, to reduce what he calls "the modern view" to the simple statement that *men save themselves*. If this proposed reduction be even measurably correct, our preference can hardly go altogether with the modern view, logic or no logic. And we are glad to believe that this pragmatic judgment of the tendency of the work

as a whole will not be utterly unwelcome to an author so frankly in sympathy with the principle of pragmatism.

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JOURNALS AND NEW BOOKS

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. XVII. Band, Heft 1, February, 1911. *Ueber falsche Interpretationen des kritischen Realismus und Voluntarismus Wundts* (pp. 1-43): A. SICHLER. — F. Klimke's work, "Der Mensch, Darstellung und Kritik des anthropologischen Problems in der Philosophie Wundts," is based on glaring misinterpretations. It has been inspired partly by Külpe's misleading criticism of Wundt, but mainly by the work of the theologian C. Willem, "Die Erkenntnisslehre des modernen Idealismus." The many quotations from Klimke's book clearly show that his criticism is directed not against Wundt's philosophy, but against a misinterpreted philosophy of Wundt. *Für und wieder den Monismus* (pp. 44-99): P. SCHWARTZKOPFF. — Monism, even in its advanced *idealistic* form such as developed by Hartmann, is one-sided and self-destructive, because it ignores the *fact* of causality. The vitalizing truth of monism is its immanence-idea; but modern monism disregards immanent activity, postulates the identity of the all-oneness, and taxes a lifeless all-substance with the task of explaining a vital, active world. It all springs from misputting the problem. Monism asks, How do matter and mind interact? and answers, The two are aspects of one at bottom self-identical entity. Now, interaction of identities is an absurdity. Following Lotze, monism ought to put the question thus: How in general do things interact? The answer would be: They interact because they are intrinsically connected by one common factor, viz.: the active principle of causality, whose effect is the very manifestation of this world being, and if this manifestation be consciousness, well then, this world being is conscious being. The immanence idea thus conceived is quite compatible with the idea of transcendence and renders transient causality understandable. Finally, on the religious side it makes possible the conception of an innerworldly relation between God and world. *Grundgedanken einer Sittlichkeit* (pp. 100-106): V. SCHLEGEL. — Man, the ego incommensurable with space and time, possesses power and will to perpetuate his actuality, to do which environment impels him to *divide* and ramify into family and nation. Pleasure and pain are the guides of man's self-preservation. Good is what causes pleasure, evil what creates pain. Love and hate are the respective memories of pleasure and pain. Already the primordial cell is endowed with these dispositions. *Versuch einer Zeittheorie* (pp. 107-110): G. MÜLLER. — In order to remove the contradiction between being and becoming, the latter must be conceived of as some form of being. Indeed, the course of events is the resultant of three components: (1) time, (2) present, or present point, and (3) temporal space of linear dimension. Thus becoming is an existing whole of

which we finite beings experience but a single phase, a so-being, given by the present point. *Die Produktionsform als geschichtlicher Faktor* (pp. 111–115): W. WAGNER. – According to Marx's economico-materialistic conception of history, the form of production is the main, if not the only, factor determining social formations. Philosophical criticism finds little difficulty in refuting this doctrine; yet there is no need of spilling out the child with the bath. Many a change in social life is a function of change in the form of production. Berger's Luther biography is a lucid illustration of how the transition from the barter form of exchange to the money medium has stimulated the psychical change from the social restrictions of the medieval period to the individual freedom of the Reformation. *Einteilung der möglichen Folgerungen* (pp. 116–123): W. FRANKEL. – All possible inference rests (1) on reciprocity of relations; (2) on a definite relation of any concept to a term of the premise; and (3) on equivalence of "pro- and post-posed" propositions. Examples to (1): When it rains the ground is wet, hence when the ground is not wet it does not rain. To (2): categorically: The flower is red, hence the flower is something red; functionally: all men are mortal, hence also this man is mortal. The fact, moreover, that this principle allows us to infer from $S - P$ (a) non- $S -$ non- P and (b) non- $S - P$, leads us to consider, with Meinong, superlogical extension which embraces also the empirically impossible (such as the quadrangular circle which belongs to the circle-existence but not to the existing circles). Finally to (3): A is B , hence it is true that A is B . Here the first proposition is pro-posed, the second stating truth or falsehood is post-posed. *Recensionen. Neueste Erscheinungen.*

Arnold, E. Vernon. *Roman Stoicism*. Cambridge: University Press. 1911. Pp. xi + 468. 10s. 6d.

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NOTES AND NEWS

IN the August *Comptes Rendus* of the Académie des Sciences there appears a communication from Dr. M. Kunz (of Dresden) relating the result of an inquiry made by him into the popular notion that blind people develop a kind of sixth sense, giving them notice, other than through their eyes, of the proximity of objects. The result of the experiments that he describes, vouched for by a great number of German doctors who assisted him, is that no such sense exists, but that the appearances mistaken for it are due to increased sensitiveness of the skin only. This is generally limited to the skin of the face, whence it can be expelled by the use of cocaine and the like, and is non-existent at the top of the head and the back of the neck. It never appears, he says, in persons who have become blind as the result of an injury, but is to be found in many who are not blind at all, including those who suffer from hysteria. It is also entirely independent of hearing, and is sometimes found among those who are not only blind, but deaf as well.—*Athanaeum*.

Cænobium has undertaken to elicit, by means of an elaborate questionnaire, an account of the religious beliefs, conceptions, and opinions of a large number of individuals. The results of the inquiry, which, it is hoped, will be of great psychological interest and throw much light on the subject of religion, will be published in *Cænobium's* Almanac for 1912. Copies of the questionnaire may be obtained from the editor of *Cænobium*, Lugano, Italy.

DR. W. L. JOHANNSEN, professor of plant physiology in the University of Copenhagen, will deliver a series of lectures on "The Modern Principles of Heredity" at Columbia University, under the auspices of the departments of botany and zoology, from October 13 to November 3. The topics of the several lectures are: "The Problem of Personal Characters," "The Problem of Unit Factors," "Problems of Correlation and Sex," and "The Problem of New Biotypes."

MR. HEINEMANN announces under the title of "The Modern Criminal Science Series" translations of some of the most interesting volumes by Continental writers on different phases of crime and criminality. The first four to appear will be: "Criminal Psychology," by Hans Gross; "Modern Theories of Criminality," by C. Bernaldo de Quiros; "Crime: its Cause and Remedies," by Cesare Lombroso; and "Criminal Sociology," by Enrico Ferri.

PROFESSOR FREDERICK STARR, of the University of Chicago, whose anthropological studies have covered Mexico, Japan, and the Kongo, sailed from Seattle in August for Korea, where he will spend the next few months.

As a memorial to Noah Porter, formerly president and professor of philosophy at Yale University, it is proposed to erect a gate at the south end of University Avenue at a cost of \$18,000.

DR. DAVID SPENCE HILL has been appointed professor of psychology and education at Tulane University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

REFLECTIONS OF A TEMPORALIST ON THE NEW REALISM

WITH respect both to its conclusion and its premises the "new realism" seems, on the whole, to deserve its adjective. The novelty of its conclusion consists in the fact that it rejects epistemological dualism without falling into idealism. It has in it quite as much of Berkeley as of Locke—to take Locke as a representative of natural realism; Berkeley, indeed, as the most eminent antagonist of the dualistic presupposition in epistemology, may almost be looked upon as the Moses—though not the Joshua—of the new philosophy. If he did not bring epistemology into what with the new realist passes for the promised land, he at least led it out into the wilderness from an Egyptian bondage. We may, as Professor Perry has proposed,¹ in classifying systems with respect to their views of the relation of idea to object, set down as the two highest antithetic genera epistemological monism and epistemological dualism; then idealism and the new realism alike must be classified as coordinate species of the former genus. Now, a realism which definitely and emphatically declares its innocence of dualism, though it is not without adumbrations in the previous history of philosophy, may, I suppose, be regarded without much exaggeration as a new type of doctrinal combination. And at first acquaintance, at all events, it must appear, in the light of the preconceptions which one is likely to derive from a study of the earlier history of philosophy, to be a paradoxical combination. For the long current terminology of the historiography of doctrines predisposes one to think of realism and dualism as synonymous, on the one hand, and of monism (in the epistemological sense) and idealism as synonymous, on the other. But if we accept the new doctrine's own account of itself as generically akin to idealism, it becomes important to determine carefully in just what consist the specific *differentiæ* by which the two kinds of epistemological monism are discriminated from each other.

¹ *Mind*, July, 1910.

At first reading of some of the formulations of their principle which recent realists have put forward, it may appear hard to define the difference between this type of realism and what has commonly gone under the contrary name. If "idea" and "object" are not two but one, which is the one? If the two snakes of the fable reciprocally swallow one another, why call the result by the name of one of the [animals] rather than by that of the other? Does not an acceptance of epistemological monism obliterate the ordinary distinction between realism and idealism? Or (if we are to retain either of the two terms whose original meaning was dependent upon a contrast now declared to be meaningless), are there not reasons for thinking "idealism" the apter term? For, since the new realist holds that "*when* things are known they are identical with the idea, or content of the knowing mind," does not even he imply at least a verbal distinction between the thing as (at the moment of perception) it is and is perceived to be, and the thing as it conceivably then might be (but isn't) *outside* of the "knowing state"? And does not he too identify the *esse* of the thing with the former? And is not this substantially the contention of the Berkeleian idealist?

There is, however, no real difficulty in defining with precision the distinction between the new realism and idealism, so far as their views about the "real" objects of veridical perception are concerned, even though both be taken as ostensible forms of epistemological monism. When the new realist asserts the identity of object and idea, he presumably means merely an identity *for the time being*. At the moments when a relatively perduring "thing" gets entangled with "the content of the knowing state," it is then and there numerically one with what is commonly called the idea of it. But the thing has many other moments, and these entanglements are but passing episodes in its history. The object is like the money in Iago's purse; "'twas mine, 'tis his," and so forth. If the new realist permits the use of the term "idea" at all—and he certainly does not himself consistently abstain from using it—his real doctrine may be formulated as the contention that some objects are from time to time identical with ideas; while the Berkeleian idealist declares all of them at all times of their existence to be so identical. In other words, the new realist (if he is truly an epistemological monist) dissents from idealism only with respect to the fate, or the manner of existence, of the object during what may be called the interperceptual intervals in the object's checkered career.

Since it is only with respect to these interperceptual intervals of time that the new realism and idealism can be distinguished, it ap-

pears likely to be advantageous to focus our consideration upon those intervals and to analyze the problem first of all in terms of them. The implied position of a Berkeleian idealist (if we do not permit him to fall back for aid upon the mind of God) with regard to these periods can be more or less intelligibly stated in such terms. For him, a given object, during the intervals between its successive appearances in perception, lapses (so far as finite consciousness is concerned) into sheer nonentity, or at most into a mere "permanent possibility" of future perceptions, while "the knowing state" persists (or may do so) in the form of representations of other complexes of objects. The new realist, on the other hand, declares that through the interval the *object* persists (or may do so) and goes on its way rejoicing. Does he, however, assert that during the interval "the knowing state" lapses, in the sense in which for the subjectivist objects lapse? With respect to the consciousness of a given individual object, obviously yes; but not quite so obviously with regard to consciousness in general. Easy enough is it for the idealist to treat the object *A* as non-existent or merely potential during its interperceptual vacations; for in the nature of the case *A* can not be on hand to protest that it is just as "real" as it ever was. But it is not so simple a matter for the new realist to treat "the knowing state" in like manner. For it is in a position to protest that it—whatever its definition may turn out to be—somehow persists in the absence of *A* or *B* or any other *particular* object of perception. In fact, the new realistic doctrine seems necessarily to imply (as the condition of its distinguishability from idealism) that there is a certain something—called by ordinary people "consciousness"—into which objects from time to time enter and from which they are presently sundered; that, for example, any unperceived object *A* has at times been "in" or "connected with" this something, and that it at the moment assumed conceivably might be therein but in fact is not, though the something at the same moment still has objects other than *A* "in" it. And this might seem to imply the simultaneous existence of a realm of objects outside of the "knowing state" and of that state itself apart from all save relatively few objects. So construed, the new realism would not, after all, appear a thoroughgoing example of epistemological monism; one would be tempted rather to call it part-time dualism. But this dualistic look, it seems, is held by the new realist to be dispelled from his doctrine so soon as one notes precisely what he conceives to be the nature of that something which seemingly persists simultaneously with the objects that have been, but no longer are, of it. And this matter is explained in the two theorems which may be called respectively the major and the minor premise of the new realism.

These premises are, of course, the theory of the externality of relations, and the relational theory of consciousness, or, better, of cognition. Relations presuppose, and do not constitute, the being and the nature of the entities related; and "being known" is simply a mode of relation into which objects may enter; *ergo*, the "being known" of an object presupposes, and does not constitute, the being and the nature of that object—such, apparently, is the argument of the new realism, reduced to syllogistic form. The symbol of the italic capital R is supposed to be the "open sesame" which will disclose the definitive solution of the ancient puzzle of epistemology. It should be noted that both premises are essential to the argument; I call attention to the fact because most partisans of the doctrine seem of late to bestow much more labor upon the justification of the major than of the minor premise. Now, on the face of it, this syllogism may appear to point no more directly to a monistic than to a dualistic realism; the conclusion of it, certainly, might be accepted with equal satisfaction by a realist of either sort. But there is incidentally contained in the premises a characterization of that something "into" which objects enter when they are perceived or thought, and with which (though outside of it) they may coexist during their interperceptual intervals. This something, it turns out, is not a "substance" or a "receptacle" or a "kind of being," but simply a relation, or, more precisely, a specific type of relatedness. Now, there is assumed to be something peculiarly unobtrusive and inoffensive about a relation; in particular, it has the modest merit of being unable to subsist without its terms, though the terms are (by the major premise of the syllogism) able to subsist without it. The conception of consciousness as a relation, then, not merely serves as part of the argument for realism, but also is intended to make it possible that that realism should escape the charge of even part-time dualism. When the thing A "enters" consciousness, it merely becomes related in a new way *to other things*; when it is "outside of" consciousness, it merely exists without, for the time being, having that particular relation predicable of it. Meanwhile other objects may be in that relation; but so far as A alone is concerned, the relation has lapsed into nonentity or bare possibility. Consciousness can accordingly be said separately to coexist with A during A's non-perceptual intervals only in the most tenuous and most harmless sense; namely, in the sense that such relation continues to be for A abstractly possible; that the other things with which A can be and sometimes has been in the given relation, continue to exist; and that some of them are perhaps, even at that time, in the given relation with respect to one another. If the admission of these very elusive

modes of simultaneous separate existence of consciousness and of an object over against it be dualism, the new realist would, I suppose, say that it is eminently what Herbert Spencer would have called a "transfigured" dualism, from which all the objectionable elements have been eliminated. And so much of a dualist he would perhaps without scruple avow himself to be. Less of one, certainly, he could hardly be without ceasing to be a realist.

Such is apparently the part played by the relational theory of consciousness in connection with the two aspects—the realistic and the anti-dualistic aspect—of the new doctrine. It is of this theory—the minor premise of the realist's syllogism—that I desire in the rest of this paper to speak. Here, at least, I let the *possible* externality of relations pass unchallenged. That, with respect to certain sorts of objects, many relations are in some sense (though in a sense which ought to be carefully defined) external and not constitutive, is too obvious to need discussion. The new realists may, I think, now fairly take it for granted that they have by much iteration acquainted the idealists with the truth that a citizen may be also a mayor without deriving from that office any of the characters of his mere citizenship, or that a man may bear the relation of father to one person, of son to another, and of husband to a third, without thereby being multiplied into as many numerically distinct entities as he has relations. I do not feel sure that any large number of either idealists or dualistic realists have been wholly ignorant of these truths, or that their failure to embrace the new realism has been chiefly due to anything so simple as a disregard of truths of this sort. I would myself, at any rate, suggest that the attention both of the partisans and of the opponents of the doctrine may be more profitably directed for a time to the minor premise. The next thing needful in the discussion, I think, is a more serious consideration than we have yet had (from any realist) of the question:² *Is consciousness merely a relation between independently existing objects, in the sense necessary in order to enable the new realist to escape dualism?*

If a negative answer to this question is equivalent to maintaining that consciousness is presented at any given moment of perception as a sort of distinct stuff or separable element over and above both the objects making up the content of that moment and the re-

² One way of dealing with this question would be to examine in detail the several rather discordant accounts which recent realistic writers have given of the kind of relation which they suppose consciousness to be. This, however, has, I think, already been well done by Professor Bode—and with results damaging to the new realism (*Psychological Bulletin*, Vol. XV., 1908, pp. 255-264). I shall here try to deal with the question in a more generalized form.

lations subsisting between them, then one must agree with the new realist that a negative answer is impossible,—at all events if we give the term “objects” the wide denotation which the realist gives to it. “The objects of consciousness,” says Professor Woodbridge, “may be as varied and variable as you please. They may be men and trees, reds and what we call mere ideas, present fact and remembered happenings, reasonings and discussions, pains, pleasures, emotions and volitions; they may even constitute what we call the self.” Assuming that all these things are to be called “objects” or “content,” then it is assuredly true that the “consciousness” existing at any specified time is never at that time “discovered as one thing set over against other things which are not already its content”; it is true, to use Professor James’s phrasing, that consciousness is *not* “one element, moment, factor of an experience of essentially dualistic inner constitution, from which, if you abstract the content, the consciousness will remain revealed to its own eye.” In such contentions as these the new realism seems to me to express a genuine fact; at the bottom of the relational theory of consciousness is a correct piece of psychological observation. It appears to me to be also true, and is, indeed, a thing upon which I should wish to insist, that, as both James and Perry have remarked, the “consciousness” (whatever it is) of a given moment of perception is revealed (as an aspect of the complex somehow, after all, distinguishable from the objects perceived) only by retrospection,—though the like can not quite be said of all our non-perceptual experiences. Primarily, consciousness is a something disclosed by a *post mortem*; you catch it in the first instance (so far as it is predicable of your own individual experiences) after the particular bit of content to which you now think of it as belonging is dead and gone. Of an item of direct perception, at least, it must be admitted that “it becomes ‘opinion’ or ‘thought’ only when a fresh experience, thinking the same object, alters and corrects it.”

With these two fundamental contentions of the new realist, then, one must in the main agree. While a given content of perception is “in” consciousness, the consciousness is not then and there revealed as an element distinct from and coexistent with the content; but when that content has lapsed, a subsequent moment’s experience directed back upon the former *does* make some kind of distinction between the previous content and the consciousness of it; and it is (in the case of perception) only from the point of view of this external reflection of present upon past that the distinction arises. But it still remains to ask why this retrospective distinction is made; just what the nature of that past “consciousness”

is which the retrospective view reveals; and whether this retrospective view does not after all exhibit in our experience a duplicity which is incompatible with the proposed alliance of realism with epistemological monism.

The answer to these questions may be seen if one considers what it is that happens when a hallucination, dream, or illusion comes to be recognized as such. While it lasts, the hallucination is for the victim of it as good "content" as any other of his perceptions. When he later recognizes its falsity, he does so because he discovers certain peculiarities to *have been* characteristic of that content. The hallucinatory object, he finds, existed only during the consciousness of it; it gives no evidence of that antecedent and subsequent existence which experience has led him to assume that material objects have. And it was not at the time an object perceived by others, though those others may at the same moment have perceived the space in which it seemed to have its *locus* and the context of other objects with which it was, even in the hallucination, associated. In fact, it turns out that the other percipients at that moment experienced as vacant, or as otherwise occupied, the very space which the hallucinatory object ostensibly occupied. Since common sense has an ancient prejudice against admitting that a body both can and can not be in a given space at a given instant, and since the testimony of many witnesses and of the general uniformities of experience is against *this* object, the victim of the hallucination, when he recovers, proceeds to call his object somehow "unreal," and to declare that the "content" that was truly in the space in question was that beheld by the other percipients. But how shall common sense render any intelligible account of this actual existence of an object at a certain moment in a definite space which a subsequent moment's corrective judgment declares to have contained no such object, save by recognizing some sort of duality in existence, by regarding the hallucinatory object as having had a being which is different from actual being in the space common to the majority of percipients? Whenever common sense first asked this question, the conception of consciousness was born, and with it the promise and potency of epistemological dualism.³ Be it observed that the corrective judgment, through the making of which the conception of consciousness is generated, predicates "unreality"—now interpreted as "existence merely for consciousness"—of the object of the hallucination *at the moment when that object was present*. The correction is made sub-

³ The conception could equally well have been generated out of other experiences of the contrast between "appearance" and "reality," *e. g.*, out of a little reflection upon the peculiarities of the memory image. But in the interest of brevity I confine myself to a single case.

sequently; but (from the point of view of common sense) it purports to describe the nature or mode of existence of the object as it was at the time when it was actually perceived.

Now, it is hardly clear to me what account a new realist can consistently give of the status of the hallucinatory object *at that time*, or of the difference between it and the coexisting "real" objects. He might conceivably say that in terms of that moment there is no essential difference between the two kinds of object, that the distinction relates solely to the subsequent histories of the two. An "unreal" object would then differ from a "real" one only in being comparatively short-lived, and in thus disappointing our natural expectations of its recurrence. But this strictly pragmatic account would (in addition to other difficulties) conflict with the view about space which it appears necessary for any genuine realist to take. The new realist agrees, I suppose, with common sense in regarding space as "independently real" and "objective," and in assuming that the portion of real space in question at the time of the hallucination was, as all save one of the percipients testified, void of the object perceived there by the victim of the hallucination. And it seems also legitimate to take it for granted that the new realism does not maintain that the same portion of real space can be at once both empty and filled. Our realist accordingly is constrained to these admissions: that the false object existed; that it existed as a definite "thing" or mass of content; that it existed in space and with spatial attributes; and yet that it did not exist anywhere in "real" or "objective" space, though it was referred to that space by the subject of the hallucination. All of which appears to be obviously tantamount to the admission that spatial objects may at least in some cases really exist in some realm or medium other than that of real space. Such a realm or medium, so far as I can see, is precisely what people ordinarily mean by "consciousness"; and the kind of object that has its subsistence therein is what they ordinarily mean by an "image" or "representation." But the existence of an object in this medium evidently is not properly describable as the momentary entrance of a real and perduring spatial thing into a new relation with other things; for in the case of the hallucination the particular thing that is "in consciousness" does not perdure and does not, though perceived as spatial, exist in the same real space in which other objects are still—by the new realist, and by common sense—supposed to exist. In hallucinations, illusions, or even mere errors, then, we have instances in which the meaning of an object's "being in consciousness" can not be expressed in terms congruous with the relational theory. These instances are, of course, not coex-

tensive with the whole of consciousness. But they are exceptions which suffice to refute the supposed rule.

It is true that some representatives of the new realism have undertaken to explain, in language which they conceive to be appropriate to their general doctrine, wherein error and illusion consist. I shall not attempt to review those explanations; for the matter can be settled by a much shorter and easier method. It seems to me to be evident from any analysis of the doctrine that it is *inconsistent with the admission that any perception or other presentation can be false or illusory at the time at which it occurs*. The new realist's universe—if I have at all understood him—consists at any specified moment exclusively of real things and real relations. If a thing has come into the "consciousness-relation" with other things, then that relation too is real, in the same sense and to the same degree as anything else. The whole mass of content, things and relations alike, exists upon a common plane of objectivity without duplication; there seems to be no way in which a new realist can stop short of what Professor Montague calls "pan-objectivism." And in such a universe I can see no room for anything that corresponds to what is usually meant by hallucination or illusion or falsity or "purely subjective existence." Doubtless, things and their relations may change; some elements in the original moment's content may subsequently prove more lasting, and so more "dependable," than others, or they may enter into a new and larger system of relations which gives them a significantly altered aspect. But a real thing does not by changing retroactively transform its past character—at least it would seem paradoxical that a realist should suppose this possible. Falsity predicated of a perception at the moment of its presence can not, therefore, be defined merely in terms of the later vicissitudes of the perceived—or rather, of other—objects. But, as we have seen, the new realist's position (which is at this point the position of common sense) requires him to regard the hallucination as *having been a false version of a coexistent fact*, to regard the hallucinatory spatial object as having existed otherwise than in the then existing real space. And this apparently can not be conceived except by assuming two distinct planes of existence, the content of one of which purports in some fashion to correspond to the contemporaneous content of the other, but is subsequently discovered to have failed to do so. Such a dualistic assumption, however, the new realist has debarred himself from making.⁴

⁴ Some defenders of realism appear to suppose it possible to avoid the difficulty arising from the existence of a real consciousness of unreal things by reciting to us the physiological circumstances under which such illusory presentations occur. This, however, seems too palpable an irrelevancy to deserve consideration.

In all this we may see something of the natural history of the conception of consciousness, which it has become the fashion in some quarters to regard as a strange sort of artificial product designed by crafty idealistic metaphysicians for the mystification of men's minds. In point of fact, that conception was manifestly an early and an inevitable discovery of common sense; and one of its primary functions was precisely to make common-sense realism possible, by making it reconcilable with the undeniable facts of dream, illusion, and perceptual error. There may, however, be a hint of truth in the would-be iconoclastic assertion that the idea of consciousness is but "the faint rumor left behind by the disappearing 'soul' upon the air of philosophy." For if the dream theory of the origin of the idea of the soul be correct, "consciousness" and "the soul" may well have had, at least in part, a common genesis; or rather, the latter may be considered a primitive and crude version of the same explanation of the same facts of experience. The savage, on waking from his dream, learned from his tribesmen that his "real" body had all the while been lying inert before their eyes; yet his memory testified that he had been bodily present in far distant scenes and engaged in the most stirring activities. From the moment when man first pondered this incongruity, the recognition by him of *some* sort of deeply significant doubleness in things became inevitable. By the savage that doubleness was (according to the hypothesis mentioned) first given recognition by means of the conception of souls. The soul was a sort of double of the body, more tenuous, more elusive, more versatile, but quite as "real" and as lasting and as truly in space. The spirit theory thus implied (though obscurely and vaguely) that the regions visited in dream or in delirium were a part of the same, single, real space in which the body lived and moved; the dreamer had been a "long way off," but he had actually been somewhere. This explanation of the facts obviously gave rise to many difficulties; the notion of consciousness and its "images" must have early begun to supplement it and eventually came to supplant it as a means of formulating the known fact of the duality in things. But among latter-day philosophers it is the new realists who seem to me to stand nearest to primitive spiritism. For primitive spiritism was a spontaneous attempt to give an account of that duality, to explain dreams and hallucinations and imaginations, in exclusively objectivistic terms. And I am not sure that it does not surpass more recent attempts of the same sort in consistency and in clearness. Those who have discarded the notion of consciousness (except as an objective "relation" between objects) ought at least to view with sympathetic interest the effort of man, before he had quite discovered the

notion of consciousness, to render intelligible just those facts of experience which constitute the points of greatest difficulty, or at least obscurity, in their own doctrines.⁵

The foregoing neglected commonplaces are not, of course, set down as an argument in favor of the dualism of common sense. Neither do they amount to an argument for idealism as such or against realism as such. All that is quite another story. What I have propounded is primarily an argument to show the inadmissibility of that combination of realism with epistemological monism in which consists the distinguishing novelty of the "new" realism. A genuine realist, it would seem, can escape dualism only at the cost of an implicit negation of the possibility of illusion and error, only by denying that there can be at any given cross-section of time both appearance and reality. And this is a cost which he at least,—sharing as he must the assumptions of common sense about the existence of a single objective space and the identity of the "real" content of any portion of such space at a given moment with the perceptions of the generality of normal percipients,—can not afford to pay. It is, however, true that the observations which have been here set forth also appear to render invalid the special form of argument for realism that has lately come into vogue, by exhibiting the falsity (or else the ambiguity) of that relational theory of consciousness which constitutes the minor premise of the new realist's syllogism.⁶

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⁵ Professor Perry has with admirable candor "admitted that error is an outstanding problem," and merely urges that "that circumstance is at least equally difficult for the subjective idealist." This, however, seems more pertinent as a criticism of subjective idealism than as a defense of the new realism. ("Conceptions and Misconceptions of Consciousness," in *The Psychological Review*, Vol. XI., 1904, p. 296.)

⁶ Two points in the title of this article perhaps need explanation. The label which the writer has there ventured to affix to himself—under the influence of motives similar to those which led Huxley to invent the name "agnostic"—doubtless suggests a special sort of metaphysical opinions, to which the writer does, in fact, incline. But for the present occasion the term "temporalism" may be taken merely as the designation of a certain method of analysis, which it is hoped that the paper exemplifies. The essence of the method consists in an attempt to identify with definiteness the particular moment of existence, the relative temporal *locus*, of each entity or process or relation referred to by any proposition. There is some reason to think that a good deal of confusion in both metaphysical and ethical reasoning is sometimes due to neglect of this precaution.—The new realism which the paper discusses is supposed by the writer to be a theory actually held by some of his contemporaries. But, desiring to avoid dispute with other men over the exegesis of their own utterances, he has usually, in the more controversial passages, refrained from naming any individuals as responsible for the opinions criticized. It is possible

APPLICATION OF THE "ORDER OF MERIT METHOD" TO ADVERTISING

THE "order of merit method" has only of late been applied to psychological problems. By this method a series of stimuli are arranged according to some designated order. For example, a series of soap advertisements are arranged in the order of preference according to which the subject would buy the soap. The great advantage of this method over that of the more generally used one of "paired comparison," is the comparative ease and quickness with which a large number of stimuli may be graded on the basis of the given criterion. This method facilitates the obtaining of results from a large number of subjects, thus avoiding the small "select" groups so commonly used in psychological experiments. A second feature of the method not yet appreciated by many psychologists is the ability to secure judgments upon very complex stimuli. Not only in these cases may the stimuli be too complex to be analyzed into their component parts, but the resulting judgments may also be based on so many details that they can not be analyzed through introspections. Yet with all these complications a series of judgments may be secured that will not vary greatly for the same individual if repeated after considerable lapses of time. In fact, one of the striking points of the method is this reliability of the judgments.

Professor Cattell was the first to make use of this method in his study of two hundred shades of gray. Since then it has been used in the study of beliefs, the measurement of scientific merit, judgments and their reliability, jokes, family resemblance in handwriting, etc. In all these cases an order of superiority was established. But now the question arises: How much superior is the best one in the series to the second, and how may this superiority be measured? In other words, has *A* twice as much "pulling power" as *B*, or three times as much, or is there a very slight difference between them in "pulling power"? In the preceding work the probable errors of the positions were employed as a measure not only of the reliability of the judgments involved, but also as a measure of the differences between the assigned positions. Recent work, however, of Dr. Hollingworth and myself would indicate that the P.E. is, to some extent,

that, in consequence, the "new realist" here dealt with is a sort of composite photograph, closely resembling no one philosopher in particular. But if these be not the lineaments of the new realism actually professed by many, the writer confesses that a good deal of reading of recent realistic philosophy has left him unable to imagine what the features of that doctrine really may be. It must at least follow that there are many irreconcilable "new realisms."

a function of the number of possible positions to be assigned the stimuli, and to that extent, at least, is not a measure of the absolute difference between the positions. Professor Thorndike has determined an absolute scale for handwriting where the differences between each grade of handwriting are supposedly equal. This was done by selecting such successive samples as were judged by a certain per cent. of the judges as better than the succeeding sample. Just such an absolute scale for advertisements is what has been attempted in this report. It is not enough to know the order of superiority in a set of advertisements. The *amount* of difference in superiority is essential to any practical use of the series. For example, if in a series of five advertisements three are between eighty-five and ninety per cent. of perfection and the other two are below forty per cent. of perfection; then surely their order of superiority is not enough. The first three are practically equal from a business point of view, while the last two should immediately be discontinued from use.

Accordingly a set of fifty Packer Tar Soap advertisements was secured through the courtesy of Mr. Edward A. Olds, Jr., of the Packer Manufacturing Company. This set includes advertisements covering a period of twenty years, many of which have been long discarded from use. Twenty-five subjects were employed, fifteen men and ten women. The following type-written directions were given to the subjects together with the fifty advertisements:

DIRECTIONS

Sort these fifty advertisements according to the order in which *you would buy* the soap.

Take for granted that each advertisement represents a different make of soap. Arrange them into as many piles as you desire; but so arrange them that the difference in superiority of one pile over the next is "just noticeable."

If the superiority of one advertisement over the next is more than "just noticeable," leave as many gaps as you feel are needed to indicate this superiority.

After the sorting was completed a second set of directions was given them, as follows:

DIRECTIONS No. 2

Designate the pile, if there is such, which has no appeal to you at all. The piles above it should then all have an increasing appeal for you to buy their soap and the piles below it should have an increasing negative effect upon you (*i. e.*, prejudice, distaste, or disgust with the soap).

The subjects sorted the advertisements into piles ranging from six in number to thirty-seven. The highest pile was arbitrarily assigned the value of one hundred, and the pile which the subject designated as having no appeal was assigned the value of zero. The

TABLE I

| Adv. | 15 Men | | 10 Women | | 25 Subjects | | Packer Mfg. Co. | B. R. Adv. Agency |
|------|--------|----|----------|----|-------------|----|--------------------|----------------------|
| | Median | Q | Median | Q | Median | Q | | |
| 11 | 84 | 18 | 75 | 40 | 77 | 20 | 85 | 62 |
| 12 | 84 | 20 | 45 | 44 | 75 | 31 | 31 | 31 |
| 29 | 67 | 26 | 70 | 28 | 67 | 23 | 71 | 36 |
| 21 | 71 | 21 | 48 | 22 | 67 | 26 | 86 | 4 |
| 13 | 60 | 19 | 54 | 42 | 60 | 24 | 81 | 2 |
| 48 | 60 | 20 | 44 | 21 | 54 | 21 | 100 | 33 |
| 31 | 53 | 19 | 50 | 49 | 53 | 18 | 91 | 36 |
| 43 | 60 | 25 | 40 | 21 | 53 | 23 | 94 | 56 |
| 3 | 60 | 31 | 41 | 33 | 53 | 30 | 70 | 0 |
| 2 | 60 | 21 | 42 | 30 | 50 | 23 | 42 | 23 |
| 10 | 60 | 18 | 40 | 44 | 50 | 26 | 76 | 6 |
| 9 | 50 | 14 | 53 | 52 | 50 | 28 | 77 | 18 |
| 45 | 70 | 21 | 37 | 39 | 50 | 31 | 65 | 52 |
| 42 | 78 | 38 | 20 | 39 | 50 | 40 | 87 | 65 |
| 49 | 50 | 21 | 39 | 29 | 47 | 26 | 23 | 0 |
| 5 | 17 | 29 | 61 | 26 | 47 | 31 | 75 | 4 |
| 15 | 47 | 38 | 31 | 21 | 45 | 27 | 21 | 21 |
| 47 | 45 | 17 | 29 | 38 | 40 | 20 | 63 | 0 |
| 50 | 47 | 17 | 38 | 47 | 40 | 23 | 44 | 0 |
| 30 | 45 | 16 | 22 | 62 | 40 | 29 | 68 | -7 |
| 46 | 40 | 32 | 20 | 39 | 40 | 34 | 66 | 18 |
| 6 | 41 | 22 | 23 | 42 | 36 | 25 | 79 | 0 |
| 20 | 53 | 21 | 9 | 38 | 36 | 27 | 69 | 0 |
| 40 | 35 | 27 | 32 | 30 | 35 | 28 | 73 | 6 |
| 18 | 50 | 22 | -11 | 35 | 35 | 35 | 19 | -17 |
| 23 | 32 | 19 | 37 | 24 | 34 | 20 | 84 | 46 |
| 16 | 32 | 19 | 42 | 26 | 34 | 24 | 39 | 0 |
| 22 | 32 | 19 | 50 | 23 | 34 | 28 | 80 | -8 |
| 1 | 45 | 24 | 20 | 31 | 33 | 27 | 48 | 0 |
| 17 | 33 | 22 | 39 | 30 | 33 | 27 | 13 | -17 |
| 34 | 45 | 22 | -28 | 47 | 33 | 42 | 64 | 19 |
| 14 | 31 | 20 | 6 | 47 | 30 | 34 | 60 | 8 |
| 32 | 59 | 27 | 13 | 33 | 30 | 34 | 28 | -25 |
| 24 | 60 | 34 | 5 | 38 | 29 | 41 | 16 | 0 |
| 26 | 40 | 32 | -6 | 42 | 28 | 47 | 40 | 0 |
| 38 | 58 | 20 | 0 | 6 | 27 | 30 | 56 | 8 |
| 44 | 50 | 33 | 4 | 20 | 27 | 32 | 82 | 26 |
| 39 | 77 | 34 | 4 | 35 | 27 | 48 | 88 | 52 |
| 4 | 25 | 30 | 14 | 29 | 25 | 32 | 67 | 0 |
| 28 | 52 | 35 | -9 | 45 | 23 | 47 | 78 | 81 |
| 25 | 20 | 37 | 10 | 11 | 20 | 31 | 34 | -8 |
| 41 | 24 | 15 | -26 | 44 | 18 | 29 | 50 | 0 |
| 36 | 30 | 22 | -17 | 25 | 17 | 29 | 38 | -8 |
| 37 | 18 | 19 | -34 | 47 | 11 | 28 | 46 | 38 |
| 35 | 18 | 23 | -28 | 47 | 11 | 29 | 58 | -8 |
| 33 | 16 | 20 | -11 | 42 | 11 | 29 | 25 | 0 |
| 7 | 10 | 20 | -2 | 46 | 10 | 24 | 6 | -17 |
| 8 | 20 | 19 | -40 | 47 | 10 | 29 | 0 | -17 |
| 27 | 0 | 7 | -6 | 36 | 0 | 7 | -12 | -17 |
| 19 | 0 | 25 | -43 | 30 | -10 | 27 | -6 | -17 |

piles between these two were assigned values proportionately. The piles below the "no appeal" pile were assigned correspondingly negative values. The values assigned to the advertisements are thus figured from (1) the advertisements which the subject considered the best in the set and (2) the advertisements which the subject considered of no appeal. Considerable care was taken in every case that each subject understood the meaning of "no appeal," so that

as far as possible it had the same content for all twenty-five subjects. It is believed that this zero point does actually approximate the zero point of appeal in advertisements. The one hundred mark, of course, simply marks the best advertisement in the fifty.

Table I. gives the results from these arrangements. The first column gives the advertisements by number in the order of superiority based on the median judgment of the twenty-five subjects. The following three columns give the median judgment and its quartile for the fifteen men, the ten women, and the twenty-five subjects, respectively. The distribution of judgments throughout this series, with the exception of four "copy ads," approximates very closely to the normal curve of distribution, and hence the quartile approximates very closely to the P.E. The P.E. of the median position is then the quartile divided by the square root of the number of cases. The fifth column gives the rating of the Packer Manufacturing Company, and the sixth column gives similarly the average rating of three members of the Blackman-Ross Advertising Agency. It is scarcely necessary to repeat that the results of the Packer Manufacturing Company are not based upon carefully compiled data, but only upon the judgment of the firm based on their business experience. Any one familiar with advertising knows that such data have not been compiled for any extensive set of advertisements, let alone a series of fifty extending over twenty years of service. If such data did exist, it could not be used to its full face value, as an advertisement of twenty years ago might have been very effective then and be out of date to-day.

The order of the twenty-five subjects correlates $+.52$ with the order of either of the two advertising experts. The correlations between the orders of the two advertising experts is $+.64$.¹ These relationships are lower than those which have been obtained with other sets of advertisements.

From the above figures, then, we have an order of the superiority of Packer's Tar Soap advertisements as to "pulling power." Also, by constructing a scale from the data of Table I., we have the *amount* of difference between any two advertisements. From an inspection of such a scale it is very evident that there is a far greater difference between the advertisement ranked first and the one ranked fifth than there is between the advertisement ranked sixth and the one ranked seventeenth.

To further check the reliability of this method, eight advertisements were so chosen that the difference between each should be equal. These advertisements were then arranged by one hundred

¹ Neither of these coefficients of correlation has been corrected for attenuation: hence the true coefficients would be somewhat higher than those given here.

subjects in the order in which they would buy the soap. The same ratio of men and women was preserved as in the former experiments, so that of the one hundred subjects sixty were men and forty women. Table II. shows the results of this experiment. The first column gives the order of superiority as assigned by the median judgment of the one hundred subjects; the second column gives likewise the order as determined above by the twenty-five subjects. Then follow the order as assigned by the Packer Manufacturing Company and the Blackman-Ross Advertising Agency. It is only fair to state that advertisement No. 4 was badly torn at the start of the experiment with the one hundred subjects, and when mended became badly wrinkled. This injury to its appearance, I believe, will fully explain the difference in its lower position with the one hundred subjects than with the twenty-five subjects. Below this table are given the coefficients of correlation between the four different orders of preference. The order of the one hundred subjects correlates as high in one case with the three other orders as the two orders of the advertising experts correlate with each other, and higher in the other two cases.

TABLE II
ORDER OF SUPERIORITY OF EIGHT ADVERTISEMENTS

| Ads. | 100 Subjects | 25 Subjects | Packer Mfg. Co. | B. R. Agency |
|------|--------------|-------------|-----------------|--------------|
| 29 | 2 | 1 | 4 | 2 |
| 48 | 1 | 2 | 1 | 3 |
| 39 | 3 | 3 | 2 | 1 |
| 40 | 4 | 4 | 3 | 4 |
| 4 | 6 | 5 | 5 | 5 |
| 35 | 5 | 6 | 6 | 6 |
| 8 | 7 | 7 | 7 | 7 |
| 19 | 8 | 8 | 8 | 8 |

Correlations between the four orders of preference:—
Order of the 100 subjects and order of the 25 subjects + .95
Order of the 100 subjects and order of the Packer Mfg. Co. + .89
Order of the 100 subjects and order of the B. R. Agency + .87
Order of the 25 subjects and order of the Packer Mfg. Co. + .84
Order of the 25 subjects and order of the B. R. Agency + .92
Order of the Packer Mfg. Co. and order of the B. R. Agency ... + .87

It is evident, then, that the “order of merit method” does give results that correlate high with results obtained in business. A series of lathe advertisements from the Bullard Machine Company has given a correlation of one hundred when compared with the data of this company.

Considerable information as to the factors which enter into good and bad advertisements is obtained from these results. In fact, the few advertising men that have seen them are very enthusiastic in declaring that this laboratory study checks up with their business

experience. One such expert stated that in his judgment the order from the twenty-five subjects was nearer the truth than that of the Packer Manufacturing Company. However, let us turn from results of interest mainly to advertising men, and consider a number of sex differences which this study brings out.

An inspection of Table I. shows that the range of judgments for the men is much less than that for the women, *i. e.*, from $+84$ to 0 for the men and from $+75$ to -43 for the women. Not only is the range of judgments for women greater than that for men, but the variability of the judgments for each advertisement is also greater. The average A.D. of the median judgments for each advertisement for women is sixty-nine per cent. greater than for the men, while the absolute range of difference of judgment for the women is seventy-one per cent. greater than for the men. The explanation of this situation appears to be that when women are given an equal opportunity with men to rate appeals (advertisements), they are able to classify their dislikes as readily as their preferences, which the men do not do. Such a condition naturally results in a greater total range (where methods of experimentation similar to those in this chapter are used) and consequently in a seemingly greater variability. A careful analysis of the data will not really show greater variability of judgment among the women. What it does show is that women have more and greater dislikes than men and are surer of them. This is also shown in the fact that the women rank thirteen advertisements as negative in appeal while the men do not rank any—the thirteen occupying thirty-six per cent. of the entire range of the women.

If now we turn to the question of sex difference in "appeal," we find that there are twelve advertisements that the men ranked higher than the women, and nine advertisements that the women ranked higher than the men. Four of the advertisements of the above twenty-one are ranked above the sixteenth position by the twenty-five subjects, the remainder are ranked below the twenty-second position of the fifty. It is evident that the two sexes nearly agreed about the best advertisements but disagreed about the poorer ones.

Only those sex differences are considered here in which the probable errors of the true medians from the obtained do not overlap, that is to say, the chances are more than equal that the differences discussed are real and not due to chance. Among the advertisements ranked higher by the women than by the men we have the three "kitten ads," the "baby in the satchel ad," the "little boy in the cart ad," the "tired tourist ad," and the "letter to Santa Claus ad." The main feature of all these advertisements is the irrelevancy of

their cuts. Among the twelve advertisements ranked higher by the men than by the women, only two can be grouped under the heading of irrelevancy—No. 20, a mother and naked child, and No. 36, two children. This preference for the irrelevant among women confirms the early work of Gale upon attention value. He states that "the female attention was more susceptible to irrelevancy, as it was also to cuts, than was the masculine attention."

Another difference that might be mentioned here is the preference of the men for the so-called "copy ads." Of the twelve advertisements preferred by the men, three were "copy ads" and four were "half copy and half cut ads." Only one of the advertisements preferred by the women could be considered as approximating a "copy ad," and there the main interest, apparently small, I should judge, would lie in the three small cuts. We should conclude, then, that women are more interested in irrelevant matter and in cuts than are men.

In conclusion, let me repeat that we have in this "order of merit method" a system of handling very complex material, and in all the cases in which it has been possible to check up its results with known conditions it has shown a high degree of reliability. Many questions of conduct, esthetics, morals, and religion, which have been too complex to be handled experimentally in the past, can be investigated to advantage by this method.

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DEFECTIVE LOGIC IN THE DISCUSSION OF RELIGIOUS EXPERIENCE¹

ONE wishes that Professor Ames had been content to draw only the conclusions which follow legitimately from the premises of his interesting and vigorously written book. In common with Irving King² and other recent writers, he holds, in general, that the religious consciousness is social in nature and in origin. In particular, he argues that religious ceremonials are the crystallizations of social habits, that sacrifice is the perpetuation of the ceremonial, social meal (Ch. VII.), that prayer is an immediate "exclamatory impulse . . . one factor in the larger ceremonial activity" (Chs. VIII., IX., XV.), that taboo can be explained without reference to divine authority (Ch. IV.), and that religion differs from magic only as

¹ "The Psychology of Religious Experience," by Edward S. Ames, Houghton Mifflin Co., 1910.

² Cf. "The Differentiation of the Religious Consciousness," 1905, and "The Development of Religion," 1910.

public practise is distinguished from private (Ch. V.). "Because these ceremonials are social," Ames says, "and therefore have the massive and corporate value of the entire community consciousness . . . they attain the distinctive character which entitles them to be called religious" (p. 72). It would be rash to assert without further discussion that Ames gains all his contentions on these hotly disputed points.³ The present writer is not qualified to pronounce on many of these moot questions, and seeks simply to point out how far Mr. Ames falls short, even granting his premises, from establishing his conclusion.

On its positive side, this conclusion is, to be sure, so vague that it is almost beyond the range of criticism. Religion is defined as "the consciousness of the highest social values" (p. 168), "a reflection of the most important group interests" (pp. 49, 50; cf. p. 72), "a system for the controlling of the group with reference to the ends which are felt most acutely by the group as a group" (p. 72). Negatively, however, the teaching of Ames gains precision through his opposition to the spiritistic, or personalistic, doctrine that religion consists in man's awareness of gods or of God. But the view that religious ceremonial is social in origin and in content, so far from disproving the doctrine that religion is conscious relation of human to divine, is perfectly compatible with it. One may admit without a quaver Ames's account of taboo, of magic, even of prayer, and still hold that the religious consciousness arises out of purely human, social intercourse only when this collective "group consciousness" gains as its object a self conceived as superhuman. Against such a construction Ames would, of course, interpose the considerations by which he seeks to discredit intellectualistic conceptions of religion. The rationalistic view of religion is, he holds, untrue to history and to psychology alike. Primitive man is not "clearly conscious of himself as a spiritual agent or soul" (p. 95); "the notion of the soul does not precede the idea of objects" (p. 96); even the philosopher only "gradually attains a dim, partially organized sense of personality" (p. 972). Ames concludes that because the sense of personality is dim, it plays no rôle in the religious consciousness, and that if it is gained late in racial and in individual experience, the religious consciousness, admitted to be primitive, can not be limited to a personal object. Accordingly, he conceives a spirit as "an object which strikes the attention forcibly" (p. 106); describes the gods of primitive peoples as "central objects in the life processes of man" (p. 311); and says vaguely that "the idea of God serves to generalize

³ Cf., for the opposing view, Wundt, "Völkerpsychologie," zweiter Band, "Mythus und Religion," dritter Teil, pp. 690 ff., *et al.*

and idealize all values . . . , gathers into itself the interests and values of our daily concerns . . . , involves a living process, law, or movement in the working of which distinct ideals are attained" (p. 318).

There is evident here, once more, a mistiness of positive conception and an insensitiveness to the limitations imposed by the nature of the argument. In the opinion of the writer, Ames argues effectively against the purely intellectualistic form of the personalistic conception of religion. But this does not justify him in his opposition to all forms of personalism. For a consciousness of self, however dim, is personal, not impersonal; and the awareness of God may be of any grade of clearness and of any conscious type. It may therefore be freely admitted that neither savage nor philosopher ever attains a consciousness of self which is free from contradictions, and that the religious experience of most people, civilized as well as primitive, is impulsive and emotional rather than reflective, practical rather than speculative. But it does not follow that the religious consciousness is impersonal or that it lacks a personal object. Rather, the consciousness of oneself in relation to a superhuman self is pre-eminently a feeling and willing consciousness even when it contains intellectual elements. From Schleiermacher down, the personalistic conception of religion has been held by scholars who have opposed, as vigorously as Ames himself opposes, a rationalistic account of the religious experience.

To conclude as we began: one may grant all the premises of Professor Ames without reaching either of his two conclusions: (1) that religion is merely the "highest" type of social experience, (2) that religion does not consist in the conscious relation to personal gods or God. On the other hand, there is abundant reason to conclude that every religion is a realized relation to a divine object conceived, or at least treated, as personal.

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REVIEWS AND ABSTRACTS OF LITERATURE

La psychologie animale de Charles Bonnet. ED. CLAPARÈDE. Geneva: Georg & Co. 1909. Pp. vi + 95.

This interesting memoir by Claparède was published on the occasion of the jubilee celebrating the three hundred and fiftieth anniversary of the founding of the University of Geneva.

The debt which philosophy and science owe to Charles Bonnet (Geneva, 1720-1793) is by no means small. "His name figures in the history of philosophy beside those of Condillac and Hartley, whose contemporary he

was, and with whose doctrines his 'Analytical Essay on the Faculties of the Soul' is analogous. Psychological works mention him as one of the first authors who held a physiological theory of memory, recognition, and attention. Zoologists recognize him for his observations on the insects and the worms, their reproduction and regeneration, and especially for his discovery of parthenogenesis. Biologists still cite his theory of the encasement (*emboîtement*) of germs; and for his 'scale of beings,' they count him among the precursors of transformism. The botanists have not forgotten his researches, still classic, on the functions of leaves, and finally psychiaters are indebted to him for the first detailed observation of a case of conscious hallucination," now called pseudo-hallucination. "In justice physiologists should also recognize him as the author of the theory of the specific energy of nerves."

Bonnet had a predilection for the study of insects, which term included spiders, worms, and polyps in his time. Curiously enough, this study led him to the pursuit of psychology and even of metaphysics. At the age of sixteen, this interest in the insects was kindled by his reading the "Story of Formica Leo" in a popular book. "I felt at the moment," he says, "a sensation which I can compare only to that which Malebranche experienced in reading the '*Traité de l'homme*' of Descartes. I did not read the book. I devoured it." Besides observing some of the most interesting behavior of ants, bees, worms, caterpillars, and spiders, he discovered parthenogenesis in plant-lice and made experiments on regeneration in annelids.

While Bonnet, in the spirit of the Cartesian philosophy, criticizes the naïve anthropomorphism so often employed in the interpretation of animal activities, and, instead, would ascribe their "industries" to some mechanism within the organism, yet he believes that animals have mind (and, in the "*Palingenesis*" at least, that animals possess a soul in essence like that of man). The analogy between our organization and that of the higher animals makes this probable, and if it is probable that the higher animals have mind, it is probable that all animals have it. Other reasons adduced in support of this opinion are: (1) while the animals are incapable of reflection, properly speaking, yet they "judge" in the sense that they feel the difference between sensations, and act in consequence of this feeling; (2) there is disproportion between stimulus and reaction (this argument is cited with some hesitation); (3) that the animals vary their procedure according to circumstances is one of the strongest arguments against the opinion which transforms them into pure machines, and (4) that beings are continuous, as described by Leibnitz, is a strong theoretical reason for the presence of mind in animals.

In his study of instinct the Geneva philosopher exhibited three tendencies: a tendency against finalism and anthropomorphism, a tendency to employ the simplest and most economical explanations possible, and finally, an attempt to render an account of behavior in terms of the structure of the body. The perfection of instinct in young animals is due, he maintained, not to innate ideas, but to innate fibers in the brain. The animal

has a certain kind of life "because that kind of life is the necessary result of its structure." So Claparède remarks that if, in Bonnet's statement, we replace the word fiber by "fibrilla," or by "constellation of neurones," we have the contemporary formula for the organic foundation of instinct.

The stimulus or "motive cause" which acts on the nervous system of the animal is the pleasure experienced in satisfying a need. This pleasure is the "voice of nature," a subjective fact which depends on the mind, and it intervenes in the most stereotyped acts of animals. Yet the mind has not the virtue of a first cause. The impulse which the soul gives to the body is itself strictly determined by the organism. Pleasure is founded on need, need on the machine or organism. "The author of nature has subordinated the activity of the soul to its sensibility, its sensibility to the play of fibers, the play of fibers to the action of objects."

Although Bonnet does not use the phrase "adaptation to novel circumstances," the fact of such adaptation on the part of animals leads him to reject the doctrine of automatism and to affirm that "there is in the animal an immaterial substance which receives impressions of sense and acts in consequence of these impressions." Thus the soul is twice invoked, first to establish agreement between need and representation, and again to establish agreement between representation and act. In keeping the phenomenal union of unitary consciousness and organism, he could not purify his psychology from metaphysical blemish. "In spite of his desire to explain everything by the fibers of the brain, Bonnet met, on his way, the soul to which it was necessary to give a rôle." On the other hand, he felt himself incapable of rendering an account, by means of simple mechanism, of the agreement between act and need; his intellectual loyalty prevented him from affirming what he could not conceive clearly. Yet in giving the soul only the limited rôle of a coordinate agent and in constantly submitting its verdicts to determinations of the body, he has shown himself, thinks Claparède, the valiant champion of psycho-physiological positivism.

The Geneva philosopher denies to animals any trace of maternal love or insight into the result of the several acts of fostering and feeding the young. These acts are all due to the pleasurable sensations which the mother derives from them.

Claparède shows that originally the comparison of human and animal faculties had for its object the justification or refutation of some metaphysical or theological opinion. It was Bonnet who inaugurated the modern conception. He was the first to admit the community of nature of the human and animal mind. This done, it remained only to point out the differences between the two. The chief difference Bonnet finds in the absence in animals of the ability to form abstract notions and to generalize. "The beasts can have only particular and purely sensible ideas—do not reason. They have not our mediating ideas because they have not our signs." Locke had already taken this position, and Leibnitz had proclaimed that "knowledge of necessary and eternal truths is what distinguishes us from the animals."

In 1741 Bonnet began repeating, on annelids, the curious observations

of Trembly on regeneration in the fresh-water hydra. He observed with much interest the production of two or three perfect worms from one by cutting it into parts. At once the question suggested itself, "Where, then, is located the mind of the worm? or is it merely a machine?" The latter view, thought Bonnet, would free us from many difficulties, but would lead us into others equally serious. He preferred, therefore, to face the difficulties with which the experiments confronted him. Philosophy declared the mind to be simple. It could not, then, be divided by the scalpel; yet philosophy was not ready to deny mind, or feeling of some sort, to regenerated polyps and worms. The result was long discussions of the uncertainty of our knowledge in metaphysics. "Before trying to discover how detached parts of the worm acquire a mind, we must first discover how they acquire a head and brain." This leads Bonnet to a theory of which present biological theories are little more than a development. Along the whole length of the animal's body are scattered germs in each of which preexists the whole body of the animal. But if these germs contain all the essential parts of the animal, they contain the mind. It is not philosophical to believe that God sends a mind into the germ only when it has developed to a certain point. When the brain can transmit impressions from the outer world, the mind can manifest its presence. Before that time, the organs being "without functions," the soul is "without ideas." Bonnet thus reduced the special problem of the rebirth of mental life in regenerated pieces to the general question of the genesis of mind in individuals.

In one of his later works the Geneva philosopher almost anticipates the modern doctrine of stereotropism, but, with rare wisdom, he finally concludes that this is not the explanation which seems preferable. "In the mind of Bonnet, then, there met and battled with each other the two tendencies, psychological and physiological, which divide biologists into two warring camps to-day."

Our author's chief work is his "*Essai analytique sur les facultés de l'âme*." His memoir on plant-lice brought him, at twenty years of age, the title of corresponding member of the Paris Academy of Sciences, and later he was made a member of the Berlin Academy.

The brilliant discussions of Claparède grace every page of his memoir and kindle the reader's interest in the thought aroused by early biology which now, after Kant's interruption of it, makes steady progress once more.

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The World of Dreams. HAVELOCK ELLIS. Boston and New York: Houghton Mifflin Co. 1911. Pp. 288.

In any work of Dr. Ellis's we are accustomed to find at least two virtues, an easy, lucid, and literary English, and evidence of extraordinarily wide reading on the subject in question. In the present book we find both these developed to a high degree. In a fluent and always inter-

esting manner he takes us over the many problems of dream life, enlivening his discourse with illustrations culled from the most recondite literary sources, and constantly charming his reader with the grace of his presentation.

When it comes, however, to the question of criticism, we are in a dilemma, for it is hard to discover what standard the writer is aiming at. The popular style of the book, the superficial way in which the numerous topics are skimmed over, and the careful avoidance of the delicate questions of the deepest source of dream thoughts, might justify one in inferring that, like so many books on dreams, it was not destined for a scientific audience. Indeed, a review in the *Times Literary Supplement* is evidently based on this assumption, for it is stated there that the book "is brimful of interest, alike for the confirmed dreamer and for the amateur in psychology." And, although the material on which the book is mainly based consists of the author's own dreams, he states (p. 13) that he has "never directed his attention in any systematic or concentrated manner to his dream life."

To conclude, however, that the book has no value for the scientific psychologist would be both unfair to the author's intentions and certainly untrue in fact. In at least two respects it is of very considerable value, in the mass of bibliographical material gathered together, and in the review given of various opinions held on the different problems of dream life. The author's own contributions to these problems are nowhere very notable. In general he attaches far too much importance to the somatic stimuli occurring during sleep as the source of dream material. It is, for instance, really astonishing to find a writer of repute in 1911 attributing nightmares to a disordered stomach (p. 108), and dreams of flying and falling to respiratory movements (pp. 134, 139). A dream of a nervous girl is recorded (p. 182), in which her brother appears with bleeding fingers. This is quite simply explained as being due to the dreamer's arm being "probably" pressed beneath her in a cramped position, no investigation whatever being considered necessary into the mental associations connected with the ideas in question.

Any one who is practically acquainted with Freud's comprehensive theory of dreams¹ will naturally measure a book on dreams by the way in which this theory is dealt with; for, whether true or false, it is the only one on the subject that systematically attempts to explain all the puzzling phenomena of dream life, and is certainly in the forefront of interest at the present time. Judged by this criterion the present volume is frankly disappointing. Although several tributes are paid to the "subtle and searching analytic genius of Freud"—"to-day the most daring and original psychologist in the field of morbid psychic phenomena"—this elaborate theory is described in less than two pages, and the author is content with dismissing it, except for a few cases where it probably holds true, without any real criticism of the issues it raises. One explanation of this doubtless is the following consideration. Freud traces all dreams to un-

¹ See *American Journal of Psychology*, April, 1910.

conscious wishes, mostly of the sexual perverse kind characteristic of normal childhood. Probably no one is better acquainted with this raw material of the mind than Dr. Ellis, but only in its naked form as evident perversities and perversions. Apparently, however, he has never interested himself in the psychological processes and mechanisms whereby these tendencies manifest themselves in indirect and disguised forms, nor has he made any attempt to penetrate the unconscious mind, where, according to Freud, is to be found the solution of the manifold riddles of dream life. In this respect Dr. Ellis's reading would seem to be wide rather than deep. Two instances of his objections to Freud's theory will suffice to make this plain. "As regards the presentative element in dreams—the element that is based on actual sensory stimulation—it is in most cases unreasonable to invoke Freud's formula at all. If, when I am asleep, the actual song of a bird causes me to dream that I am at a concert, that picture may be regarded as a natural symbol of the actual sensation, and it is unreasonable to expect that psychoanalysis could reveal any hidden personal reason why the symbol should take the form of a concert" (p. 166). Whether the expectation is unreasonable or not is irrelevant to the main issue, namely, whether in fact psychoanalysis does reveal any such reason; those who have investigated such matters without prejudice come to the conclusion that determinism holds much more rigidly in our mental life than is generally supposed. "It would be difficult to believe in any case that in the relaxation of sleep our thoughts are still pursuing a deliberately purposeful direction under the control of our waking impulses." (The reviewer may remark that according to Freud, though the direction of thoughts during sleep is meaningful, it is not "deliberately purposeful," and that they are under the control of unconscious impulses, not waking impulses—a very different matter.) "Many facts indicate—though Freud's school may certainly claim that such facts have not been thoroughly interpreted—that, as a matter of fact, this control is often conspicuously lacking. There is, for instance, the well-known fact that our most recent and acute emotional experiences—precisely those which might most ardently formulate themselves in a wish—are rarely mirrored in our dreams, though recent occurrences of more trivial nature, as well as older events of more serious import, easily find place there. That is easily accounted for by the supposition—not quite in a line with a generalized wish-theory—that the exhausted emotions of the day find rest at night" (p. 173). To this it need hardly be said that the facts in question are fully and satisfactorily dealt with by Freud in his "*Traumdeutung*" and that they are in perfect accord with his general theory.

In conclusion it may be said that Dr. Ellis's book, though well worth reading on account of the material it contains, and welcome as being likely to stimulate further interest in this important subject, can hardly be regarded as furnishing any very serious contribution to our understanding of the problems of dreams.

ERNEST JONES.

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JOURNALS AND NEW BOOKS

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. XVII. Band, Heft 2, May, 1911. *Wesen und Zweck des Kunst* (pp. 143-170): J. FISCHER. — Like creative science, art is the offspring of pure reason, the distinctive feature of man. The language of art, however, is not that of concepts but of mental images, of spiritual clearness. In its development art passes through three phases: unconscious synthesis, conscious analysis (imitation of nature), conscious synthesis. Again, observation is to science a means for gaining knowledge, for discovering truth; to art it is *esthetic*, it is both cognition and creation, and as such it is an aim in itself. *Kausalität und Existenz bei Kant* (pp. 171-182): K. AARS. — The relation of the two inseparable categories of existence and causality remains indefinite in Kant's system; whence the contradiction in his treatment of the noumenon (whose existence is causally inferred) and of its relation to the phenomenon. Likewise, in his pragmatistic zeal to refound Hume's empiricism, he causally infers the existence of a mental faculty. However, this he can accomplish only by establishing in the mental faculty (the cause of *a priori* certitude) a sort of intellectual intuition the existence of which he more than once denies. *Die psychologischen Grundlagen der Kantschen Erkenntnistheorie* (pp. 183-242): J. REINHOLD. — The very plan of the critical philosophy is laid out on a psychological foundation. The three "Critiques" faithfully correspond to the three soul faculties. The treatment in the "Critique" of the concepts "Verstand und Sinnlichkeit" is essentially the same as in Kant's works on psychology. At his theory of analytic and synthetic judgments Kant arrives by way of his psychological distinction of sense perception and reason. Furthermore, the moment of certitude characteristic of the analytic judgment is, of course, psychological (referring as it does to the subjective side of the judgment). Its analysis leads, it is true, to the *a priori*, but this latter gets its legitimacy from the law of contradiction whose derivation is impossible without the aid of psychological considerations. Thus all the transcendental structure, forms of knowledge, categories, principles and all, stands only because it is securely propped up by psychology. Indeed, no epistemology is possible without the distinction of subject and object, and this distinction, as Herbart has long ago remarked, is of a purely psychological nature. *Die Wahrheit* (pp. 243-250): R. S. TRIVEDI. — The one truth *par excellence* is: *I am*. This truth once accepted, many other truths are forced upon us as vital, as our life-preservers. There is no truth or untruth outside of human life. Whatever exists in and for itself is in no one's power to tell. *Die neuesten Erscheinungen*.

MIND. July, 1911. *On Some Aspects of Truth* (pp. 305-341): F. H. BRADLEY. — A review of various aspects of truth, including a defense of the author's own method; a criticism of the criterion of Hedonism and Darwinism; an examination of the objective reference of truth, and its existence prior to being thought; and finally the relation between reality

and truth, and the doctrine of truth viewed as a copy of reality. Throughout it is maintained that it is impossible "to deal with truth apart from an examination of the nature of reality." *Reality as a System of Functions* (pp. 342-356): GERALD CATOR. — "My thesis is that functionization—the becoming of a function itself-and-not-another—is that in which the Realness of Reality and the Being of Being consists. The more functionized the more real." *Professor Bergson on Time and Free Will* (pp. 357-378): D. BALSILLIE. — A critical exposition, partly sympathetic, but chiefly hostile, of Bergson's "Time and Free Will." An account is given of Bergson's doctrine of duration and its application to the problem of free will. It is asserted that the author pushes his thesis of pure duration too far, both in its application to the interpretation of conscious states and to its solution of the problem of determinism. *The Meaning of Human Freedom* (pp. 379-393): G. C. FIELD. — After pointing out the inadequacies of the stock arguments in behalf of freedom, it is asserted that the nature of human freedom turns on the kind of connection between motive and action. As to the *kind* of connection, no identifiable or precise account can be given, and, moreover, confusion arises from attempting to do so. *Discussions: The Origin of the Atomic Theory* (pp. 394-398): A. W. BENN. *A Note on Pragmatism* (pp. 399-401): E. D. FAWCETT. *Feeling and Thought! A Restatement* (pp. 402-404): HENRY J. WATT. *Critical Notes*: F. C. S. Schiller, *Riddles of the Sphinx*: E. D. FAWCETT. Alfred Sidgwick, *The Application of Logic*: D. L. MURRAY. G. Heymans, *Die Psychologie der Frauen*: HELEN BOSANQUET. M. Pradines, *Critique des conditions de l'action*: F. C. S. SCHILLER. *New Books. Philosophical Periodicals. Notes.*

Bergson, Henri. *La perception du changement*. Oxford: The Clarendon Press. 1911. Pp. 37. 1s. 6d.

Boodin, John Elof. *Truth and Reality: an Introduction to the Theory of Knowledge*. New York: The Macmillan Company. 1911. Pp. ix + 334. \$1.75.

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Hamann, Richard. *Ästhetik*. Leipzig: B. G. Teubner. 1911. Pp. viii + 120.

Kirn, Otto. *Sittliche Lebensanschauungen der Gegenwart*. Leipzig: B. G. Teubner. 1911. Pp. 124. M. 1.25.

NOTES AND NEWS

DR. WILHELM DILTHEY died on October 5 at the age of seventy-seven in Berlin, where he had been professor of philosophy at the university from 1882 until 1905. Before his appointment at Berlin he was professor at the Universities of Basle, Kiel, and Breslau. His reputation was made by his "*Leben Schleiermachers*" (1870). Dilthey was one of the first to

recognize that the history of philosophy is a chapter in the history of culture, and that anthropology is collecting important information about its beginnings. A characteristic course at the University of Berlin was "Die Geschichte der Philosophie in Verbindung mit der Kultur." Important among his works are "Beiträge zum Studium der Individualität," "Die Funktion der Anthropologie in der Kultur des 16ten und 17ten Jahrhunderts," and "Studien zur Grundlegung der Geisteswissenschaften." Dilthey was a pupil of Ranke, and held his appointment at Berlin as successor of Lotze.

DR. STEVENSON SMITH, of Hampton-Sidney College, who has had charge of the psychological clinic at Teachers College, Columbia University, this summer, has accepted a position in the University of Washington, Seattle, Washington, to establish a psychological clinic in that institution. The position has been created in connection with the Gatzert Foundation for Child Welfare, and offers wide opportunities for usefulness. Aside from the work in the university, the foundation provides for public lectures and an experimental school for teaching. Dr. Smith will have the cooperation of a large corps of physicians.—*Psychological Bulletin*.

It is stated in *Nature* that Dr. R. Karsten, lecturer in comparative religion in the University of Helsingfors, has started on an expedition to Gran Chaco and Bolivia for the purpose of making investigations on the sociology and religion of various tribes of natives, some of whom are little known, while others have never been visited. He will be accompanied by his cousin, O. Lindholm.

At the opening of the new session of the Aristotelian Society on September 30 Mr. Bertrand Russell gave the presidential address, taking as his subject "The Relations of Universals and Particulars." M. Bergson has promised to be present and take part in the discussion.

DR. L. R. GEISSLER, of Cornell University, has been appointed associate psychologist in the physical laboratory of the National Electric Lamp Association, Cleveland, O.

THE University of Utah has this year established a separate department of psychology, and the new chair thus created has been accepted by Joseph Peterson, Ph.D. (Chicago, 1907).

W. C. RUEDIGER has recently been advanced from assistant professor to professor of educational psychology in the Teachers College of the George Washington University.

PROFESSORS GEORGE SANTAYANA and R. B. Perry, of Harvard University, have leave of absence from the university for the second half of the current academic year.

PROFESSOR ERNST MEUMANN, of the University of Leipzig, has accepted a call to the Kolonialinstitut in Hamburg.

DR. H. P. HANUS, professor of education at Harvard University, has leave of absence for the academic year 1911-12.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

PRAGMATISM AND ITS "PRINCIPLES"¹

I

THAT the complex diversity of motives which are loosely designated by the word "pragmatism" needs to be reduced to the simple and adequate outlines of "principles," that their background and source need to be shown and their common implication developed, is obvious enough. Some hold them to be inwardly incompatible in thirteen different ways, others in two; some hold them to be altogether compatible; others, to be justifiably compounded of oppositions. But the whole pragmatic controversy has been confined to particular points of issue, no general view of the field of pragmatism has been taken, no map of it drawn. A book entitled "Principles of Pragmatism," therefore, was to be looked to with some hope. In the case of Mr. Bawden's book, the hope, I must confess, was disappointed. The disappointment, it is fair to add, is as likely to be due to my personal deficiencies as to the book's faults. For as to content, Mr. Bawden is either highly original or completely mistaken; and as to manner he is clear and smooth enough. In the latter aspect, indeed, the book is commendable. Mr. Bawden has a sense of style, not always sustained, but sufficient. He writes easily and concisely and sometimes with a not unpleasing eloquence that is as sententious as it is warm. He has built the book well—the whole structure of "consciousness," "feeling," "thinking," "truth," "reality," "evolution and the absolute," being made to rest upon "experience," while experience is identified with a certain formal process or activity. This process appears to be Mr. Bawden's skeleton key which fits all the locks and resolves all the combinations that fasten being into "problems." Moreover, in its first intent it does not come trailing clouds of glory from epistemology or from any other heaven of obfuscating modes of restating the obvious. It is truly a "principle" and truly philosophic. Mr. Bawden's in-

¹"The Principles of Pragmatism. A Philosophical Interpretation of Experience." H. Heath Bawden. Boston and New York: Houghton Mifflin Company, 1910. Pp. 364 + viii.

terest is truly an interest beyond physics. His key unlocks all the historic shut doors of philosophy. No one can deny it the eulogium of *principle*. What gives me pause is the claim that it is a principle of pragmatism.

That Mr. Bawden should think it so is not unnatural, for both his terminology and his outlook are those of the Chicago School. He makes much of the "functional point of view," the "tension," and the other categories of Chicago. These enable him to make of pragmatism an idealism and to supply it with an absolute—a "functional absolute." The importance of the term "functional," then, is immeasurable. It is the solvent of all contradictions, the sublator of all antitheses. It rationalizes and approves whatever it qualifies—even the absolute. Mr. Bawden uses it alternately with "organic" and defines it to mean "that all distinctions in theory are true only in relation to the specific situation within which they are set up. . . . In case of all dualisms of reflective thought which have occasioned so much controversy in the history of philosophy, each abstract member of the dichotomous distinction is true only in relation to the other" (p. 48).

From this "point of view" the cosmic system is beheld, and appraised. The world, curiously enough, is a system, and it is the stuff experience is made of. "Experience is nothing less than the whole system of things. It is a synonym for the universe, for the totality of the diversity of things to which I am in any way related" (p. 64). Reality is *it*, taken as "content"; and it is reality taken as "process." The process is the more important of the two. "Activity is the very essence of being" (p. 64), and the form of activity is invariably some dichotomy, or polarization—the stream of it is "continuous, dynamic, . . . with moments of check and reinforcement, alternate resistances and controls." In Hegelian terms there is the thesis of the unbroken continuity of experience, the antithesis of "check," and the synthesis of "reinforcement" or "control."

It follows hence that the only thing that is self-sufficient and self-sustaining is the whole. "The individual has only a functional identity" (p. 76). It is what it is only in virtue of the rest of reality's being what the rest of reality is. Its "freedom means control," therefore; it means merely "that the activity of the individual must be regulated with reference to the rest of society" (p. 78). And its persistence, its "immortality," in "any case is an immortality of function"—since a knife with a new blade and a new handle is still called the *same* knife by its owner!

In such a world mind also must be functional. This world, indeed, may be said to be a generalization from "functional psychology," largely for the sake of proving that mind is functional.

And we are accordingly treated to the old familiar story that "consciousness is one name for designating a certain kind of adjustment which takes place between two portions of the universe. And the organism, the brain, the cortex, represents the center of transformation of the energies involved in the adjustment" (p. 96). Its condition is "tension . . .," i. e., it "appears only when the process of action is relatively impeded or interrupted" (p. 103). So "feeling and thought are types of transformation of energy . . . incipient movements . . . and an image is a nascent act . . . a motor cue" (p. 108). Feelings emerge in the inhibition of instincts (p. 129), while "thinking is a doubt-inquiry process which arises in connection with the attempt to solve a problem" (p. 158). It is unnecessary to elaborate further. The rest continues this digest of the familiar dogmas of "functional psychology." Truth, also, which is logically and actually the next subject of Mr. Bawden's discourse, might be dismissed in the same way. "Facts," we are told, "are not presented to knowledge; they become facts, *the facts, in and by the act of knowing.* . . . Cognition is constitutive and determinative of their nature as facts" (p. 198). The essence of cognition is "intended agreement" (p. 200), and that signifies the whole of the "functional theory of knowledge." In this theory, truth is that which, on the one hand, satisfies a need ["need is the experience regarded as inadequate and therefore objectified as stimulus over against the self, which for the moment is identified with the response" (p. 202)]; and on the other hand, truth is that which "works" in relation to a purpose or end. And the two are interdependent, "functional," and only names for aspects of the whole. "Need and supply, stimulus and response, conditions and results, are ways of stating the same process from different points of view" (p. 203). Truth is "the organization of *all* the factors of the situation, no matter how recalcitrant they may first appear to be. Error is not removed by denying it: it disappears only in being transformed into truth by being put into its proper place in relation to other partial truths" (p. 204). Truth, then, requires a criterion which is immanent in the "truth-situation." This criterion is the congruity of the old and the new. It is the "element of stability," the "unity and continuity of function," "a permanence amid change." It creates, so to speak, objectivity, and "makes experience an intelligible whole" (p. 209). And this is a principle of pragmatism!

Since "congruity" has this power, it is not unnatural that it shall be identified as the heart of reality. For truth yields us reality, and with reality it is that Mr. Bawden next deals. "Reality is value—the expression of a concrete individual purpose: . . . the needful, the important, the useful, the necessary . . . the appreciation of

value" (p. 239). Hence its essential constituent is the process of cognition, of reflection: "thinking is thinging" (p. 250). But thinking is related to the solution of problems, so that from the other "point of view" reality or thinking is "objectivity," and "objectivity means obstruction, inadequacy, interruption" (p. 257). "The obstruction to the free working of habits juts out in consciousness as an object" (p. 258). Space and time from this point of view "are methodological statements of experience which emerge within and for the sake of the reconstruction of action" (p. 267). "Space consists of certain stresses and strains, certain tensions in the effort to move" (p. 267). "Time originally must have grown out of the attempt to measure distance in terms of rhythmical bodily movements . . . activity is the real measure" (p. 272). Time contains consciousness when the latter "is regarded as the functioning of the nervous system. Time is in consciousness just as truly, however, when consciousness is regarded as the bare significance or meaning abstracted from its existential basis . . ." (p. 276). As for cause, it is "simply teleology read backwards" (p. 285), and "to take anything as an effect . . . is to take it as an end, to take anything as a cause is to take it as a condition or means" (p. 289). These three great categories of philosophy and science, thus most orthodoxly disposed of, spell objectivity, which merely "means the ability to state experience in spatial, temporal, and causal terms in such a way as to give control of further experience."

Thus, within the totality and unity of experience, dichotomies are continually setting themselves up of subject and object, mind and body, thought and action, pain and pleasure, success and failure, truth and error, mechanism and teleology, change and permanence, etc. The world of experience seems now a flux, now an absolute. Which is the more correct view of it—conservation or evolution, change or eternity? These seem, according to Mr. Bawden, to offer a merely superficial antinomy of which his solution is striking, when one remembers that it is "pragmatic." Although activity is the essence of reality, it is not creative. There is no addition, he grants the conservationist, to the sum of existence. "The only novel feature is the new relation in which the existent stands. By redistribution of forces there is an evolution of new meanings with no addition to the substance of reality. But, one may say, a new meaning adds something to the sum total of the universe. And thus the doctrine of conservation seems to be infringed. The reply is that the *meaning here becomes an existence* just by reason of the fact that it is treated in this instance as *a meaning* taking its place along with other meanings in a system. Meaning as meaning is not an increment, for it is universal. It is not the last member

of a series; it is the whole system reconstituted. It is inevitable that meaning shall be taken as existence in this sense, but, thus viewed, there is no real contradiction between the doctrines of conservation and evolution. Each concept has significance only in relation to the other. The evolution of meaning is the condition of the conservation of existence, just as truly as the conservation of existence is the condition of its having meaning" (pp. 299-300). It follows that "both empiricism and absolutism are in a sense true" (p. 305), for change, being so "fundamental a character of our experience," must have an absolute significance. Hence we have promulgated, without apologies to Professor Royce, a "functional absolute." This absolute is not imperfect. It is "perfect in the sense of embodying infinite potentialities, potencies, promises for the future" (p. 308). It is, in addition, the "absolutism of realization . . ." (p. 309) of these experiences in which "the questions of origin and destiny are irrelevant," in which "validity collapses into immediacy" (p. 310). The "functional absolute" is the world of appreciation, problemless and self-consistent and changeless. "We state experience as process, *i. e.*, temporally, spatially, and causally, only when it is not satisfactory. When it is fully adequate, as in the case of instinct, intuition, habit, esthetic absorption, these distinctions fade away or become irrelevant. The attempt to *state* it necessarily gives us the fragmentary and piecemeal view. The world of description is inevitably a finite, spatial, causal world. It is the world of appreciation which is infinite, eternal, and absolute. . . . Time and eternity, temporal process and timeless appreciation, are the opposite poles within which the concrete content of experience revolves" (p. 277).

On reading over what I have just set down, I feel, I must confess, a strong impulse to leave it for what it is worth, without further comment. But this book of Mr. Bawden's stands, I think, for more than his personal view. To me it seems the uncontroversial restatement of the doctrines of a school, boldly and frankly made, and even if the school should disclaim all connection with the restatement, it would still be the constructive deductions of a thinker thoroughly in sympathy with that school's "principles." If, therefore, these "principles of pragmatism" of Mr. Bawden's seem too much like an ironic joke by an opponent of pragmatism, if the book is a museum of fallacies, of avoidable ambiguities and inconsistencies, these are perhaps due less to the author than to his material. The author, indeed, has had the courage of his premises and has hunted down their consequences to the limit of their emotional-logical outcome. That he has, in his course, inverted the essential pragmatic intent and procedure, is no more than the fortune of such a chase, from such a starting-point. Idealism, eternalism, "functional absolute,"

conservation—how else could the deduction have proceeded, with its polarities, its tensions, its integrations? Mr. Bawden has truly taken his bull, and by the horns. If he is at fault at all, he is at fault for not seeing that his bull is an Irish bull and that its horns are the horns of a dilemma. For Mr. Bawden's pragmatism is to me, at any rate, no more than Hegelianism of the extreme left, disguised by the slang of "functional" psychology; and if what he calls pragmatism is true, he is not a pragmatist, while, if he is a pragmatist, what he calls pragmatism can not be true. I do not hereby deny Mr. Bawden any title whatsoever to the word "pragmatism." Unfortunately his title is not inconsiderable, for the word has been a uniform for all shades of divergent opinions, whose unanimity is perhaps more their common cause against transcendental idealism than any inner positive harmony of attitude and constructive purpose among themselves. Now that the enemy is dead, it may perhaps be conducive to peace and comfort to change or to apportion the uniform among its wearers, assigning the whole, the coat, the cap, the trousers, or the gold lace as befits. For in the common cause differences were forgotten and discrepancies passed over; allies explained and apologized for each other. As, however, the controversial problems are mastered and disposed of and the constructive doctrine of the pragmatists begins to emerge, it is impossible any longer to pass over obvious differences.² It has become necessary to account for them, to indicate their tenor and direction, and to determine the general status and ramifications of the alliances and enmities of the "principles of pragmatism." It is something of this sort that I looked for in Mr. Bawden's book, and perhaps the best thing I can offer in criticism of it is a sketch of the pragmatic position as it appears to me at this time.

II

The philosophy for which the word pragmatism properly should stand is the philosophy of him who first gave the word its vogue and present significance, and to whom, far beyond any other, is due the contemporary great vitality and richness of the newer philosophic thinking throughout the western world. But this philosophy has a history. In the dozen years since the California lecture in which the pragmatic method was for the first time formally announced, the thought of William James did not stand still. Although his fundamental insight remained in all respects identical, the testing and elaboration by concrete application in the field of religious experi-

² Cf. R. R. Marett's review of "The Meaning of Truth" in the *London Nation* (I forget the date), and Dr. Schiller's skillful ditto in *Mind*, N. S., 74, April, 1910. Also Dewey, "Some Implications of Anti-intellectualism," this JOURNAL, Vol. VII., No. 18.

ence, by the give and take of controversy, and above all, by a decade of unflinching and difficult labor in analysis, labor as rigorous in its procedure as smooth and luminous in its outcome, all served to adjust in the end whatever errors in perspective, in emphasis, and signification the storm and stress of an utterly fresh reenvisioning of being entailed. Already in "A Pluralistic Universe" and in "The Meaning of Truth" the final statement was partly formulated; and in an introduction to philosophy, planned long ago, and left, alas, unfinished, the master had meant to complete his system.

It is this system that must rightly constitute the "principles of pragmatism." Reduced to its fighting weight, its cardinal doctrine is the proposition that the core of reality is duration. And the human corollaries from this proposition involve a doctrine of method and the proposition that mind is value, both intrinsic and instrumental. I shall consider each briefly, in the order of mention.

1. Empiricism, when it apprehends at its face value and in its direct appeal every possible item, severally and collectively, of the aggregate content of experience, when it accepts as data relations as well as terms, fictions as well as existences, becomes *radical*. As a method, it then insists on tracing to a positive, concrete, and particular terminus or *meant* each and every substitution, representation, or *meaning*. As an account of the business of knowing, it starts with intrinsic significances (knowledge of acquaintance), and passes to *significations* (knowledge about), which, to be true, must lead back to and lose themselves in significances. Both method and epistemology describe definite processes in a world the very nature of which is process, duration, flux, at once continuous and discrete. Any part of it, taken intrinsically, is "a *that* which is not yet any definite *what*, though ready to be all sorts of whats; full both of oneness and of manyness, but in respects that don't appear; changing throughout, yet so confusedly that its phases interpenetrate, and no points, either of distinction or of identity, can be caught. . . .³ In all this the continuities and the discontinuities are absolutely coordinate matters of immediate feeling. The conjunctions are as primordial elements of 'fact' as are the distinctions and the disjunctions."⁴ It is a world in which all things struggle for mastery and nothing dominates; its content has opportunity rather than achievement: each item of it is equally there with every other item, but none has been able to raise its head above its fellows. Each is, yet not altogether independently. The self-same functions differently, now with and now without something else. It may bear to other things rela-

³ "A Pluralistic Universe," Appendix A, p. 348. Boodin's incisive "Time and Reality" gives a more formal account of the durational flux.

⁴ *Ibid.*, p. 349.

tions that are external, yet efficacious, internal and yet far from being consumed in the relating activity. The inwardness of the relation of *likeness*, for example, does not affect the numerical diversity of the resembling entities; the externality of the relation of *withness* is sometimes just the necessary condition for giving diverse entities a common status and an identical function. Nowhere is the universe cut out of whole cloth, nowhere is anything exclusively so and no more. In the thickness of experience neutrals touch and interpenetrate that in the universe of discourse are utterly exclusive and parallel; in discourse, again, there are contents and dynamic changes that the whole unutterable residual cosmos does not exhibit and perhaps would not suffer. Of course such a world is alogical. Things act together that can not be reasoned about together; things are reasoned about together that do not act together. But to be alogical, it is well to remember, is by no means to be devoid of logic. The enduring world is alogical in the sense that logical form is incidental to it, not in the sense that it does not contain logical form.⁵ Had it failed to do so, the human mind could never have been, for the essence and the glory of mankind is to have extracted from existence and to have appropriated—perhaps too blindly and greedily—to itself, the logical architectonic.⁶ But it does not follow from the human love of logic that that most useful and necessary mode of being is being's soul, any more than that the Australian's boomerang, which kills the bird, is itself a bird. Taken by itself, every bit of experienced content, even the content of concepts and of logic, overflows into other bits not itself, capriciously and often to the destruction of its own integrity, just as much as it defends that integrity against the residual flux. Thus, as Bergson says, the very concept of change itself is less than the concrete face of it. And its "eternity," its changelessness, is merely its *qualitative designation*, not its self-annihilation. To say that the change does not change is merely to indicate its character, not to arrest it. Eternity, indeed, taken literally, is a mere negative, an empty and not a positive term, and hence not truly thinkable. What it really means is perdurability of quality, an active self-assertion against the destructive flux. It involves either simultaneous processes of duration, one of which is slower than its fellows, or equivalent durations, opposed to and reversed upon each other, or it means that our attention has simply neglected

⁵ Cf. on this point "A Pluralistic Universe," pp. 216-221. It is worth while dwelling on because of Montague's extraordinary criticism (this JOURNAL, Vol. VII., No. 6, p. 141) in which he opposes James by (1) simply restating the latter's own position, and (2) introducing a shadow of the representative theory of knowledge, which pragmatism has demolished.

⁶ Cf., for another word on this point, my discussion, "The Pragmatic Notion of *ελγ*," this JOURNAL, Vol. V., No. 11, p. 293.

the duration-aspect of quality, not that that aspect is not there. But it contains nothing super- or trans-durational.

It follows that relations, which are not contents but modes of duration, are neither absolutely internal nor absolutely external, but pass from one mode to another and back, indifferently. It follows that certainties and values are not immutable, but do endure, that nothing need be completely "now" nor yet merely "to be." Each is pregnant of more than it is, and it is this burden, not itself, that renders it significant in the pervasive struggle to be. The burden is cumulative, concrete, absorbs and consumes its bearer in itself as an animal absorbs and assimilates its food. It exceeds order and prescience even where these are its intrinsic content; it buds and bourgeons inharmoniously and horribly with as great ease as it grows harmoniously; it is always off its balance and tumbling on; and its control is as imminent a risk as its anarchy is a menace. Hence, when in the struggle for life consciousness gives birth to intent, intent is not only threatened with frustration through its own fulfilment, but must be less than that fulfilment. Every *meant*, even in error, is more and richer than the *meaning* which envisages it, never completely foreseen by it, always eclipsing it, and existentially additive to it. Every *meant* is a possession, not a transition; it is a significance which is held, when known, as directly and immediately "satisfactory." Satisfaction is the relation which balances organism with environment. It is awareness itself, external to its object and intrinsically apprehending and possessing it.

2. The pragmatic doctrine of method is based on this observation. It is more familiar and less elusive than the *Weltanschauung* from which it gets its force, and little need be said about it. For Pierce it was a mode of establishing belief in terms of immediacy. It was to be distinguished from the methods of tenacity, of authority, of deductive *a priorism*, by the reduction of formula to instance, "law" to event. For James it involves "the attitude of looking away from first things, principles, 'categories,' supposed necessities, and of looking toward last things, fruits, consequences, facts."⁷ Its procedure consists in reducing the meaning of propositions to *particular* consequences, of passing from ideals to existences, from facts, through principles, back to facts. It accepts and experiments, but does not legislate. It takes everything as liable to modification in the course of future experience, modification which need follow no particular order, obey no determinate law, assume no prevised form. But it recognizes the equal likelihood that it may do so, and is ready to take its chance. Thus, it does not abandon the ordinary logic of method; it merely recognizes that its efficacy is limited by the essen-

⁷ "Pragmatism," p. 55.

tial alogicality of experience and seeks further insurance against defeat. It hence recognizes that classes, concepts, universals, laws, hypotheses, theories, are in themselves, whatever their origin, *external* and *additional* data in the world of facts which they serve to explain or to control, and that to be truly efficacious they must lose this diversity and truly fuse their essence into its, becoming numerically one with it. They too have to struggle for place in the pervasive flux and can demonstrate their rightness only as fitness: they must actually survive among and serve to control the data to which they are applied. These data are each its own standard and judge, and nothing from outside can without a struggle legislate for it, or explain it. The truth which attains it, the interest which means it, it consumes and assimilates, so that it comes finally to the mind with no veils between. The differentia of its presence is "satisfaction" and the process which leads to it is "truth."

3. The doctrine of method, with its radically empiric bias, its use of the term "satisfaction," its emphasis on process, already indicates that the essence of mind or consciousness is value. Value is the truly spiritual element in existence. The rest is body, is environment, is energy, atoms, whatever you please. But the act of cognition, the nature of consciousness or awareness, is mind. It is the value-relation which appraises, first intrinsically and then instrumentally, the environment's significance for the body. The content of this appraisal, this feeling, becomes mental only by the act of appraisal, and this act is at its circumference transitive, external, elusive, and affixed, though even there not steadily, to the body at its center.⁸ Content and feeling, or awareness, or appraisal, constitute the simplest and most elementary form of mind. The content is "knowledge of acquaintance," subject of the inevitable predicates, *good* or *bad*, which alone can give objects status as consciousness. When objects attain this status they receive a sort of emphatic identity, their individuality becomes "asserted," as Mr. Bertrand Russell might say, against the residual flux. But they are not otherwise altered; they remain still "facts" as "independent" and as self-preservative as the remaining aggregate of being.⁹ They are what they seem and are, neither more nor less. This, rightly conceived, is tantamount, in Professor James's own words, to logical realism. It simply means that immediate apprehension receives, selects, *values*, but does not yet alter the environment which is its content. There

⁸ Cf. "The Moral Philosopher and the Moral Life," in "The Will to Believe"; "The Place of Affectional Facts," etc., in this JOURNAL, Vol. II., No. 11; and Chapter X. on "The Self" in Vol. I. of "The Principles of Psychology."

⁹ Cf. "A Pluralistic Universe," Lecture V., "The Compounding of Consciousness."

is no predication but the predication of value, and valuation is the essence of intrinsic or direct cognition, and the basis of extrinsic or indirect cognition, *i. e.*, of predication and instrumentalism. The various theories of mind which have given rise to that altogether futile and empty German discipline called "epistemology" are no more than mistakes about the nature of direct cognition. Had these mistakes been avoided by use of a proper observation of cognitive process, there would have been no epistemology and no "problem of knowledge." Immediate cognition exhibits the real nature and ground of parallelism, and to this extent justifies that wise theory; it is the bare datum of fact from which the "soul" and the "transcendental ego" derive: when its total content is called matter and the more fleeting act mind, it gives rise to the "problem" of representation. All these theories and problems are rooted in the confusion of "knowledge of acquaintance" with "knowledge about." "Knowledge of acquaintance" *reveals*, but does not signify. "Knowledge about" signifies, but does not reveal. Knowledge of acquaintance apprehends the intrinsic nature of the object; "knowledge about" makes use of one or more other intrinsic natures, immediately apprehended, to manipulate and control the first. The first is given as "intuition"; the second as predication. The first is intrinsic value, the second is derivative, extrinsic value, value in use.

Use ensues on goodness—or evil—but can have no significance without them. Use is true "knowing," the transitive activity of knowing as distinguished from the intransitive, the flitting of it, as Professor James says, from the perching. It is in use that are generated the secondary cognitive values—meaning, method, truth and error, "knowledge about." And these arise within the stream of cognition in the first intention; so that there is no instrument which is not also immediate, as a knife must be handled to be used, and a photograph before the eyes to represent. Knowing, hence, as it goes on in the daily life, has two dimensions and proceeds in two modes which may as easily interfere as cooperate with each other. For intrinsicality is arrestive; an immediate good is not easily given up, and instrumentality is enslaving; it offers, but need not yield, "satisfactions." When it does yield them, *i. e.*, when it is true, its content is not only used, but used up, consumed truly and *not* "sublated" in the nature it leads the mind up to. This nature is in some degree already present with the instrumental content, and when it is fully present this content lapses. Thus, fundamentally, intent is all. When a series of immediates is used as equivalents for any other one immediate, intent is reached by "analysis"; when any one is used for a series, it is reached by "synthesis." The relation is symmetrical; analysis and synthesis are distinguished by the *direction* of meaning,

not by its substance, for the substance is used up and disappears in its terminus, in the *meant*. Hence, in this secondary mode of knowing, in "knowledge about," we can not truly say that the cognitive relation is external. In this mode of knowing knowledge clearly does make a difference to its object. The *meant* does accumulate the full content of the meaning, assimilates it, and is inwardly richer or poorer by just so much. And this is the case in any realm of discourse, absolutely without exception.¹⁰ Otherwise error becomes impossible, meaning irrelevant, and the indisputable instrumental character of knowing and its function in the struggle for survival an illusion.

III

William James's "Pragmatism" lays no weightier emphasis on mind than on nature, on environment than on organism, on concept than on percept. It aims less to be a "system" than a narration of what is taking place and a plan for meeting events. Being is the budding and burgeoning flux of a seething plurality of entities, each *there*, and striving to stay, *with*, if not *on*, and by means of, its fellows. It is an aggregate of *eaches*, each with a vote which it casts primarily for itself. Each seeks to maintain an enduring equilibrium with its environment, and its maximum success seems to be attained in a circular process, like the movements of the planets and

¹⁰ The great historic exception, which even Professor James sometimes concedes, is "mathematical truth." I have struggled long and hard to see why mathematics should be excepted, without success. I can not find that a judgment in mathematics is in any sense different from a judgment in any other field of discourse, or that mathematical entities have less to strain for self-maintenance in the flux, or are less spontaneously deliquescent. Of the equated entities in a series like this: $4 = 2 + 2 = 3 + 1 = (-4 + 8) = \sqrt[3]{64}$, etc., each has an intrinsic nature of its own, a character, a mode of behavior completely concrete and individual. If predication in mathematics is the mere assertion of identity, it is futile tautology; if of diversity, it is nonsensical contradiction—in all honesty, contradiction. Intrinsically, 4 is *not* 2 and + and 2 or $\sqrt[3]{}$ and 64, or -4 and + and 8, any more than in its intrinsic nature water is hydrogen and oxygen or the diner is his dinner. The identity is really an *identification*, and $2 + 2$ are really altered and 4 is actually reconstructed when these terms are equated. The entities of mathematics endure, interpenetrate, and fuse one into the other through knowing and otherwise. They may be used to manipulate, change, and control one another even more than the less simple contents of the flux. Indeed, it will be difficult to find anything in experience, except value itself, which is so thoroughly and essentially permutative and fluent, so plastic and adaptable to cognitive need. Is not one of its most fundamental notions the *variable*? Is there any field of experience in which knowing seems to be more effectively constitutive and alterative? Mathematical entities, in truth, are so easily confluent and indeterminate, so "universal," and hence so delightful and pleasant to deal with, that mathematics has been the chief source of that intellectualist fallacy of composition which identifies mathematical facility with the harsh and laborious conjunctions of the full flux.

the cycles of living being. In the end it gets submerged in the rest of the stream and is lost, though not utterly beyond recall. Nevertheless, in becoming circular, the indeterminate activities of the contents of the flux get form. Where this is inanimate and comparatively simple, we call it mechanism: where it is highly complex and animate we call it purpose. M. Bergson thinks that the two forms are reversals each of the other, and that matter is life "undoing" itself, running down. James suggests that they interpenetrate and are partly coincident, having similar lilt and direction.¹¹ Be that as it may, both mechanism and purpose appear to maintain a gyroscopic character; are circular differentiations of movement within a multi-dimensional, irreversibly propulsive flux, and are probably as intimately related as James shows them to be and as most thinkers are unwilling to grant. They involve, both of them, novelties, chances, and mutations, discretenesses as well as necessities and continuities and uniformities. These latter *have* to be allowed for as much as the former, the former no less than the latter. James's treatment of causation, indeed, indicates best of all the delicate balance of his system, its freedom from favoritisms and special pleas, its striving for justness. Resting on human values though it does, it refuses to distort the world, as idealisms do, that values may be eternally conserved, or to belittle value as such, as materialisms do, that the preferred excellence of a type of order may seem omnipotent. In this it is as impersonal and free from bias as Spinoza's "absolutism." It concedes to all things, equally with spirit, the right and the will and the struggle to be. It accepts on the same level with human aspiration all its conditions and encumbrances, extenuating nothing, mitigating nothing, rejecting nothing, excusing nothing. Where it enforces, it enforces against inadequate emphasis, as in the case of the will to believe—where it defends, it defends against over-emphasis and excess. How vastly different is this from philosophies all spirit, all matter, all logic, all this or that, and how essential to any right conception of man's place in nature and of militant devotion to the victory of excellence!¹² Pragmatism, far from being a product of bias, as so many of its critics seem to think, is possible only when bias has been eliminated.

It is bias, stress on one side or another of the delicate balance of James's system, that gives rise to the schools of pragmatism—humanisms, instrumentalisms, epiphenomenalistic instrumentalisms, new realisms and other shadings and rearrangements of pragmatic

¹¹ The unfinished book, "Some Problems of Philosophy"—see chapter on causation.

¹² The doctrine of consequences derives, in fact, from this impartiality. Pragmatism may be defined as radical Darwinism—the struggle for survival is the key to the nature of what survives.

doctrine. If the convenient Hegelian precedent be followed, pragmatists would be segregated into *right* and *left* wings. Where the emphasis falls upon mind and personality, we get a pragmatism of the right; where it falls upon extramental characters, we get a pragmatism of the left. The left appears to preponderate.¹³

1. *Humanism*.—The only form of pragmatism that is clearly a pragmatism of the *right* is humanism. In the humanistic treatment of being, mind stands out and the residual content falls far into the background. Humanism insists on the priority and significance of the spiritual factors of reality. It sees, on the one side, a collection of spirits; on the other a "primary reality" which has for its limit an indeterminate plasticity like the Aristotelian *ἕλη*. This "primary" reality is the "fact" which is "anterior to the distinctions between 'appearance' and 'reality' and covers *both*."¹⁴ The cosmos we are familiar with is the outcome of progressive modifications of this anterior stuff by striving spirits, whose common purpose is harmony¹⁵ and whose instrument is *conception*, which becomes a part of the constitution of reality. These spirits are concrete and personal. The stuff they are made of is *will*. The being which arises through their action on "primary reality" must be described in terms both empirical and teleological. Its content is given in the modification of belief by belief, under conditions of desire, need, purpose, selection, and use.

Humanism's emphasis falls, then, perhaps rightly, on the center rather than the periphery of experience. In its logical development it starts from this center and works outward to "independent" existence and "other minds." But these are all to be taken as views in which the center of vision is more important than the vision. Humanism is thus "personal idealism," pragmatism given an ego-centric or subjectivistic bias.

2. *Instrumental Pragmatism*.—Per contra, and corresponding to the "objective idealism" of the Hegelians, there is the objectivistic or instrumental pragmatism of the Chicago School. Its emphasis is on the periphery rather than the center, it tends to insist that there is no center, or rather that being is all center. It agrees with humanism about the constitutive function of the concept in reality, but it is not clear whether it assimilates reality to the concept, or the concept to reality. Mr. Bawden's "principles" are ambiguously reversible in that respect; Professor A. W. Moore definitely tends to think being in terms of mentality, while Professor Dewey's pronouncements ap-

¹³ I omit any discussion of Bergson, as I mean to offer, on another occasion, a description of his relation to James.

¹⁴ "Studies in Humanism," p. 580.

¹⁵ "Riddles of the Sphinx," second edition, p. 278, § 24; p. 414, § 3. The notion recurs frequently in the book.

pear to have varied with the occasion. Thus it is possible to describe mind materialistically, as does Mr. Bawden, in terms of "the redistribution of energy," and causation idealistically as "teleology read backward." However, let the special emphases be what they may, the general tendency of the school is "objectivistic," in the sense that it will recognize no center. It has no "ego-centric predicament" because the self or subject is taken simply as "the agent that undertakes and is responsible for a certain cognitive event" and its problem is invariably the specific one of the relation of agent to act in this specific instance.¹⁶ Its task is merely to see what "knowledge and reflective intelligence is and means as a specific type of behavior in a more inclusive scheme of behavior."¹⁷ It assimilates thought to not-thought, then, rather than not-thought to thought. It does not remain at the "knowledge standpoint," though it often speaks of not-thought in terms distinctly mental, *i. e.*, purpose, need, etc., but insists that knowledge always implies existences prior to and independent of their being known and is what it is precisely by the operation of factors of mediation, that is of abstraction, generalization, and logical relationships.¹⁸ Thus knowledge is for it always *knowledge about*, the business of which is to render things intelligible by its only means, concepts. It is therefore only a transitive operation in the interests of behavior, and is assimilated to acts, to biological functions, organic responses and adjustments. These are the "primary functions," and the "knowledge standpoint" in all its patterns, structures, and purposes is treated as evolving out of them and operating in the interests of "their guidance and enrichment." Such being the case, this type of pragmatism is positivistic. It could, and in Mr. Bawden's case does, deal with the "problem of the whole," but in Professor Dewey's case it won't. Mr. Bawden defines a universe in terms of conservation of energy and the evolution of meaning; Professor Dewey regards the "origin, structure, and purpose of knowing such as to render nugatory any wholesale inquiries into the nature of being."¹⁹ There is, for him, something beyond, but we can not know it, while for Mr. Bawden the fundamental notion of "function" and a radical application of the typical "functional" doubt-inquiry process give rise, logically enough, to his "principles of pragmatism," and these, by a system of substitutions of the most obscure and least-analyzed concepts for the most familiar and definite (*i. e.*, by an inversion of the pragmatic method), make it possible to define being as a stream, "continuous, dynamic, . . . with moments of check and reinforce-

¹⁶ Dewey, "Some Implications of Anti-intellectualism," this JOURNAL, Vol. VII., No. 18, p. 480.

¹⁷ *Ibid.*, p. 481.

¹⁸ *Ibid.*, p. 478.

¹⁹ *Ibid.*, p. 479.

ment, alternate resistances and controls," consciousness as the "transformation of energies involved in adjustment," and the whole show as eternal and flowing at one and the same time.

To stop short of this amorphous absolutism seems in philosophy arbitrary. Why should not the whole school take the logical consequences of its position? Insisting on the *continuity* of being, and making little of (if indeed, it does not deny) "knowledge of acquaintance," it can not ever get at the intrinsic nature of the extramental objects and situations it postulates. For it all relations are internal and constitutive. Ideas, hence, can never be mere apprehensions of objects; they are "attitudes of *response* toward extramental things. . . . [Their] origin is in some empirical, extramental situation which provokes ideas as modes of response, while their meaning is found in their modifications—the 'differences'—they make in this extramental situation. Their validity is in turn measured by their capacity to effect the transformation they intend."²⁰ Ideas, then, are neither more nor less than links in a continuous and unending causal series—*effects* of events other than they, *causes* of events they are different from. But the causation is not discrete, there are no discontinuities. That inward discrepancy, "check and reinforcement," should arise in this dynamic flow is somewhat miraculous, but it must not be dealt with, since its coming is a problem of "wholesale inquiry into the nature of being." Suffice it that it comes, and "form" arises in the amorphous continuum when it comes. It is this "form" or "function" that is "value." Meaning, method, truth, as Mr. Bawden has indicated, are mediators between "extramental" situations of which they are alterings and which they in turn alter, but which they do not apprehend and the intrinsic nature of which they can not render.

3. *Epiphenomenalistic Pragmatism*.—Surround the continuous and efficacious flux of actualities which is the "being" of instrumentalism with an environment of possibilities or essences, introduce discreteness, if not in this flux, at least into consciousness, turn consciousness into *another kind* of existence, set it on top of the flux instead of inside it, and you get epiphenomenalistic pragmatism. This very subtle and very adequate system conceives the causal order vertically rather than horizontally. The existential flux is a loosely articulated mechanism in which are actualized a few of the infinite possibilities or essences that environ it. The upshot of some of its circular processes is consciousness. Consciousness has no habitation and no operative significance. It is an *expression* of operation, but can not operate. When the "object of operation" or "matter-in-use" comes to consciousness, it has no longer any power or function;

²⁰ "The Influence of Darwin on Contemporary Thought," p. 185.

it has been *used up* in becoming informed: all its potentialities have been realized, so that, being *worked out*, more work is impossible to it. Consciousness, therefore, is the limit or end of existence. It is a third term, a boundary, between existence and essence, where they meet and pass into each other. Consciousness, hence, is the *seat* of value, parallel to the existence which occasions it, but without reciprocal influence; hence of value intrinsic, immediate, final, *uninstrumental*, *autonomous*. Instrumental value is underneath consciousness, not *in* it; is justified by consciousness, not altered by it. The aspects of mind that we call method, meaning, truth, it follows, are necessarily at the top of the flux, are inoperative "knowledge of acquaintance," the inert "forms of reality," not its dynamic flow. Yet their significance is altogether pragmatic; for consciousness, though autonomous pure "imagination," must needs persist, and to persist must be relevant to its conditions, which are the instrumentalities that are consumed in it. Hence, though its essential affair is the detached and impartial envisagement of any essence, only those that are attached to the body's interests can truly survive as mental content. Mind thus signifies the survival value of the organism which it invests, and its history, in man, is the growth and quest of the "life of reason": it is the story of the progressive accommodation of *end* to *instrument*, of the perception, by mind, of its own conditions. Its final step would be the coincidence of the two in a self-sustaining organization of interests,—i. e., in the reciprocal identification of "knowledge of acquaintance," which is the only kind of knowledge this theory can logically admit, with "knowledge about." This, however, involves an efficacious *psychological* flux and all the working significances which pragmatism entertains in the terms truth, meaning, and method. But, as such, they are to be distinguished from the total "form of reality," which is ambiguously system or chaos, as *special* forms, to be called "true opinion," and are the relevance of each mind's imaginative autonomy to its operative conditions, taken severally or collectively. "True opinion" is historical, changes, grows, develops, becomes false, etc. Its history is the history of the "life of reason."²¹ Consciousness has here a dual rôle. It shares partly the efficient, operative character of the flux from which it rises and partly the eternal inertness of the essences it views.²²

²¹ Hegel's "Phänomenologie" is a species of such history. The most significant and important narrative is G. Santayana's "The Life of Reason," particularly "Reason in Common Sense." The present description, indeed, applies chiefly to Professor Santayana's system.

²² Whether this duplicity is not due to conceiving consciousness as a "substance" rather than a relation, is a question I can not here enter into. The solution of the difficulties of parallelism is determined entirely by "substantial" or

The system, it will be seen, admits of both continuities and discontinuities, external relations and internal. It recognizes the identity of mind with value, insists on its autonomy and on its need to be relevant. In this respect it is close to pragmatism as such. On the other hand, its contrast between essence and existence, *eternity and time*, its substantification of consciousness, its exclusive parallelism, and its stress on pure mechanism set it toward the left. Mr. Bawden's characterizing phrase applies well to it. "Time and eternity, temporal process and timeless appreciation, are the opposite poles within which the concrete content of experience revolves."

4. *The "New Realism."*—It is yet too early to be certain whether the "polemic and program of reform" dubbed "new realism" can be anything more than a polemic and program of reform. Its chief function has been critical and negative, and apart from the dogma of external relations, it has as yet offered no very significant and distinctive pronouncement.²³

The constructive motives that lie behind it seem to flow from two sources: the one, the Leibnitzian particularism of Mr. Bertrand Russell; the other, the radical empiricism of William James. The combination of the two, so far as it offers right results, seems to yield little more than an architectonic restatement of the deliverances of "Does Consciousness Exist?" "A World of Pure Experience," "The Thing and Its Relations," "The Place of Affectional Facts in a World of Pure Experience," etc. Some of the protagonists of the movement seem to endorse also the pragmatic account of truth, and take exception only to humanism and anti-intellectualism.²⁴ How far the others go there is as yet no means of knowing. The movement must be away from pragmatism in so far as it is toward the Leibnitzian realism of Messrs. Russell and Moore.²⁵ Thus far, the divergence constitutes itself in the assertion of (1) the universal externality of relations and of (2) the eternity and universality of the identity logic. The first of these assertions implies the "relational" treatment of consciousness. The "relational" conception allows both the *necessary* parallelism and externality of "knowledge of acquaintance" and the necessary internality and interactionism of "knowledge about."

²³ I must except Dr. Edwin Holt's forthcoming book, "The Concept of Consciousness." This profoundly original analysis of being and mind is, I think, in every respect harmonious with radical empiricism. It is, in fact, a wonderfully effective explication, by the method of identity logic, of radical empiricism's fundamental principles.

²⁴ Cf. Perry, this JOURNAL, Vol. VII., No. 14, p. 369.

²⁵ Since the publication of Mr. Russell's newest "principles of mathematics," this is by no means certain. With the abolition of real classes, the use of the "theory of types," and of the notion of "logical fictions," Mr. Russell bids fair to develop a vicious pragmatism even worse than his vicious intellectualism.

denial of real change and the substitution therefor of static change, in which Zeno's paradox that the moving arrow *is* at rest designates reality.²⁶ Changes can only be changes in the external relations of logical simples that remain immutable through all the changed relations: cause and effect can be only coordinated alterations in the positions of such immutable simples. This is obviously unpragmatic. Its corollaries are (1) that all knowledge must be *presentative*, *i. e.*, only knowledge of acquaintance, immediate and direct, and (2) that representative knowledge, knowledge about, is impossible. So, the chemist should *perceive* the hydrogen and the oxygen in water, together with the relation between them: for the gaseous properties of these elements must be held to reside absolutely unaltered in their aqueity. Aqueity can not be added to them by their relation, for that is simply an ordinal complex in the total H—O—H. Still absurder examples,—*e. g.*, the external relation of a diner to his assimilated dinner,—could be offered *ad nauseam*.

The second of the assertions of the "new realism"—the eternity and universality of the identity logic—has for its realism still graver consequences. It allies it to humanism, of which the assertion makes it a converse. Humanism asserts that the order of reason (logic) is the order of being: the "new realism" asserts that the order of being (logic) is the order of reason. For both this order is the *only* order. That they conceive logic very differently does not rob either conception of its claim as the essence of reason. The "new realism" becomes, therefore, only a narrow sort of objective idealism. It, no less than idealism, commits the pathetic fallacy as well as the fallacy of composition. For logical order *is* demonstrably the order of human reason and is the differentia which designates man, the rational animal. And logical order is not demonstrably the sole order of reality, which must contain all possible orders. To identify the order of reason with the order of being is no less subjectification than to identify *esse* with *percipi*, nor is it less thinking the whole in terms of only one of its parts. To use one of "new realism's" own terms, the propositions that all relations are external and that all orders are logical order are merely "speculative dogmas."

Let me now try to bring together these separate strands of thought. For pragmatism the prime doctrine is the proposition, Reality is flux. Relations in it are *both* external and internal, sometimes the one, sometimes the other, some only the one, some only the other. Knowledge is a relation both external and internal—external when it is presentative, internal when it is predicative. Mind and value are identical and may be characterized as knowledge is char-

²⁶ Cf. Russell "Principles of Mathematics," pp. 347, 469 ff., and Spaulding, this JOURNAL, Vol. VII., No. 3, p. 63 ff.

acterized. Humanism tends to insist on the internality of relations and the substantial priority of mind, instrumental pragmatism tends to insist on the internality of relations and the substantial priority of extramental factors; the new realism tends to insist on the externality of relations, the incidence of mind, and the unreality of change, but is divided in its motives. Epiphenomenalistic pragmatism alone has room for *both* internal and external relations, for the autonomy of mind and value, and the fundamental reality of the flux. Though its methods and instruments of analysis are different, it is in intent, in justness of view, and the humanity of its outcome, nearest to pragmatism.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Value and Dignity of Human Life. CHARLES GRAY SHAW. Boston: Richard G. Badger. 1911. Pp. 403.

The title of this book, as well as its dedication to Rudolf Eucken, suggests at once its fundamental thought and the source of its inspiration.

Its central thought is the creation of an order of being independent of material nature through ceaseless striving of spiritual humanity with that material order. Its aim is to expound a major morality in which the scientific, esthetic, ethical, and religious activities of man are but aspects of a whole. The book is divided into four parts. In the first the fundamental position is discussed. In the second the naturalistic view of life, whether as hedonistic or eudemonistic, is considered from the point of view reached in the first part. In the third part, from the same point of view, is criticized the ethics of duty or rigorism. This leaves the way open for the elaboration in the fourth part of the position gained at the end of Part I.

In this, the author remarks, "human life as such . . . as a system may now be surveyed for its own sake. . . . Humanity in itself apart from pleasure and rectitude, or desire and duty, contains a life that is worthy of thinking and living." From a survey of human life in its totality, there "arises a major morality whose premises are found in the universal conditions of human life, and a minor morality content to arrange the details of conduct for the time." So "ethics [in the narrower sense] becomes a phase of life, but not the whole of it." "Man needs more than conduct to achieve his humanity. . . . Major morality finds it necessary to depart from the morality of doing duty and satisfying desire, for a form of life which springs from the center of man's nature and expands over the totality of his being. The world is aiming to produce not moralists but men. . . . Minor morality is a means, not an end. Life exists for

life's sake." "Neither desire nor duty is final in human life; both are means to an end which is the culture of humanity." "Man is only man when his art and worship disclose the harmony of the world without and the endlessness of the same world within the soul. . . . When this higher view of ethics is held we shall cease to wonder whether art has or has not a moral function. . . . We shall find for them [the creations of art] a secure place in the major morality of a striving humanity" (pp. 287-293). "The world is trying to produce not moralists but men." The goal, that is, of "creative evolution" is a realized ideal humanity. The accepted moral purpose for men is the realization of that humanity in themselves. But what is needed beyond this is some definition or description of what constitutes essential humanity. This is attempted in the fourth part of the book under the two concepts of value and dignity. As value is determined by desire, the question is forced on us, What does man, after all, essentially desire? What is his utmost sincere desire, when stripped of all that is transitory and superficial? The answer is, To become all that is human. This is the worth of life, and this determines all other values. It is an end both real and ideal, immediate and ultimate. Thus well-being consists in a constant search for something realizable (p. 315). And there arises "an increasing sense of worth as man's self-realization goes on" (p. 316). In this sense of worth, so conceived, is comprehended the Hellenic calm of attainment and the romantic restlessness of "a perpetual crusade for the ideal." The essence of life is in "a principle of ethical becoming" (p. 316).

But, furthermore, we must still ask, What is that which man is to be ever becoming? The answer to this is found in what is the true dignity of man, "and the true dignity of man's soul consists in realizing himself as a being of inner rather than of outer life" (p. 342). "The moral commandment is no longer, 'Do this' or 'Be this,' but 'Create this,' which is the spiritual self" (p. 347). Man's actions are for spiritual realization. "Man acts for the sake of thought; we do things in order to know things" (p. 349). "Our human dignity forbids us to exalt the unthinking man of action whose life finds its sense in deed, and calls upon us to postulate the superior man who lives an inner life, wherein action is only incidental and experimental" (p. 352).

Enough has been said to give the fundamental position of the book and its implications. Of course it is open to all the criticisms that from the point of view of naturalism have been urged against it. But in the last analysis, does man's consciousness, or spirit, if you will, exist for physical adjustment, or is physical adjustment for man's consciousness? Only on the latter assumption can science and art and morals have any reason for their existence. On the other hand, the book seems to the reviewer to be open to criticism from the point of view of the social philosophers. In hard matter of fact, what is meant by "the spiritual self"? This concept, so far as the exposition of the book goes, seems to lack content, to be too merely formal. The content of it can be given only in social life. The meaning of self-realization in any sense can be found only in the concrete relations of men to each other. But again, such con-

tent, when found and defined increasingly in social experience, will, we may believe, be spiritual, as the book implies.

So much for the substance of the book. But in closing an exception should be taken to the form of it. "Made in Germany" is what one feels, not only as regards its Teutonic style and its over-amplification of exposition, but also as regards its superabundance of erudition and its pedantry of unnecessary quotation in the original tongues. There are many writers, both in America and England, masters of German philosophy, and that too in the German tongue, who yet have not lost the better form of speech and exposition to which they are heirs. Quotations from foreign languages should be translated, and only when there may be a question of equivocal meaning should the original appear, and then in a footnote. Very few for whom the book is presumably written can be other than hindered by the numerous quotations in the original languages. If it be claimed that those to whom the book is addressed are so familiar with these tongues as to gather the subtle shades of meaning of the originals, the only reply is that this is not true, or, if true, the book is written for very few indeed. The form of this book may win approval in Germany, but here in America it hopelessly limits its field of appeal. This is a pity, for it seems on the whole to set forth a very profound and wise view of human life—a view stimulating and convincing.

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Erkenntnistheorie und Naturwissenschaft. OSWALD KÜLPE. Leipzig: S. Hirzel. 1910. Pp. 47.

This lecture on epistemology and natural science was delivered on September 19, 1910, at the eighty-second meeting of German investigators and physicians in Königsberg.

In this publication Professor Külpe endeavors to show the relations existing between the task of epistemology and the task of science as such. While modern logic, epistemology, and metaphysics are in closer contact with the sciences than was formerly the case, there is yet room for a division of problems. Kant saw a division of problems here and gave an epistemological explanation of the nature of science. His transcendental philosophy takes up not the content but only the presuppositions of pure mathematics and natural science in an inner and universal connection, and thereby develops a theory of science. Kant does not ask *whether*, but *how*, a natural science is possible. He does not try to erect a philosophical doctrine of nature in the place of science, but, through a theory of knowledge, endeavors to show how a natural science is possible.

Professor Külpe maintains that, inside certain limits, a fixation and determination of the real is possible. And in the development of this problem the author gives attention to realism. There are two factors in experience, the subjective and the objective. When we search for real objects we have to separate these two factors, and recognize the independent factor in its peculiarity. To the natural scientist, to the investigator of nature, independence of the experiencing subject has become the sign of the ob-

jective world. For him there is an independent realm of law which does not root in the qualities of sensations. If we sensed red where we now sense green, and *vice versa*, the realm of law would not be disturbed. And the so-called mechanical qualities are no exception, for the qualities of the touch and muscle senses show dependence upon the psychophysical organization, in the same ways as do the other qualities. As a matter of fact, the real world, for the natural scientist, is an abstract happening.

Now what is the nature of the criterion of the real world? Professor Külpe holds that there is no purely rational or purely empirical criterion of reality. For only experience can tell us whether independent objects do or do not exist, and only thought can abstract from all subjectivity. But we can not draw a distinction between ideal and real objects merely upon the ground of pure thought. Neither is experience, taken alone, synonymous with the real. Magnetic and electrical phenomena are not relations between sense contents. Only as a product of experience and thought can the critical realism of natural science be comprehended. This realism separates those relations which primarily belong to sensations from those relations which are independent of us, which are forced upon sensations. It seeks more precisely to determine thought-things. It attempts to show that independent relations can exist, without sense content forming their apparent bearers. Sensations are the signs which refer to reals. Forces, valences, resistances, energies, potencies, etc., are attributed to bodies. All these qualities are only capacities for bringing about real events. Thus natural objects can be viewed as the conditions of existence for realized relations, for necessary changes in the *Bewusstseinswirklichkeit*. Natural objects are the bearers of relations. These bearers can be characterized solely upon the ground of the processes to be borne by them. If a body can make movements, it needs to have only spatial-temporal signs.

There are extensive and intensive limits within which alone our senses can instruct us concerning natural processes. The circuit of existence-conditions is not sufficiently characterized through the totality of empirical capacities. The existence-conditions for dependent reals are not sufficient essence-conditions. The question arises as to whether science aids us in the determination of reals. It does. There has been growth in the manifold of knowledge, and development in the direction of completeness and finality, correctness and exactness. Our insight into the essence of real objects has grown extensively and intensively in all departments. The principle of the subjectivity of sense qualities has not hindered physical science from carrying on and explaining its investigations in the spirit of realism. The natural scientist does not claim to have a clear idea of the outer world in the sense of a true copy of reality. He deals with *Gedankendinge*. Thought-determinations can offer us more than the senses are ever able to give.

Now what relation should epistemology bear to natural science? Epistemology should accompany science, but should not remain behind it. It should make clear to us the realism of science, exhibit and systematize its presuppositions and methods, and at the same time draw certain limits

for it. Epistemology should carry out the work of Kant and in his spirit become a theory of science. This theory of science is not identical with science, just as esthetic theory is not identical with artistic production. The scientist studies nature and creates knowledge; the epistemologist studies the nature of science and conceives knowledge.

In reading this lecture one is impressed with the author's sympathy toward science and scientific methods, his antagonism toward phenomenalism, his constant recognition that something conditions our experience, and his view that there is perfect harmony between true science and true epistemology. He stands for a theory of knowledge that will take account of the realistic attitude and procedure of natural science. At the present, when there is so much controversy between realism and idealism, this published lecture is timely and valuable.

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UNIVERSITY OF LOUISVILLE.

A Text-book in the Principles of Education. ERNEST NORTON HENDERSON.
New York: The Macmillan Company. 1910. Pp. 593.

Professor Henderson's book furnishes a reasonably satisfactory affirmative answer to the question so often asked by men teaching in higher institutions and secondary schools, "Can there be a science of education?" It has been argued that, science being abstract and general, and the child concrete and individual, there can not, in the very nature of the case, be a science of education. Natural aptitude, wide knowledge, and successful experience, it has been claimed, are the things that make for good teaching; and attempts to reduce education to a science, and to place so-called principles of education in the hands of prospective teachers, not only are unnecessary but may do harm to the child.

The recent study of education in colleges, universities, and the better type of normal schools has changed unmistakably the wide-spread prejudice in our country against the study of principles of education. The extraordinary development of psychology, and particularly genetic psychology and child study, together with the study of the social sciences, has given new view-points and fresh claims to pedagogy for scientific recognition.

The science of education is simply the science of human development, in so far as that development is purposely determined; and, while psychology does not pretend to furnish inexorable rules that may be applied to all teaching situations, it does furnish rational incentives and instruments of insight that may profitably be applied to the needs of the teaching process.

Professor Henderson's book is an altogether praiseworthy effort to provide some of the instruments of insight that modern psychology has to offer to scientific students of education; and, while one might wish that his acquaintance with the vast array of studies of the mental development of children had been a bit more intimate, his book is certain to prove useful to teachers and others who seek sane conceptions of educational theory.

The author has endeavored to present his subject from the point of view of evolution, and to give the various conceptions of the aim of education as determined by organic and social science. He has given a reasonably clear differentiation of heredity and education, and has pointed out the interrelation of education and social control.

In treating of the process of education in the individual, he has given concise and admirable presentations of the various theories of recapitulation, perceptual readjustment, processes of conscious learning, formal discipline as an educational principle, psychic effects of imitation, education in language, and the place of play in education.

His analysis of the various educational agencies, while necessarily brief, has the more important feature of accurate perspective. He presents the evolution and function of the school, the evolution of liberal education, the rise of vocational training, and the function and ideal of education in a democracy.

Professor Henderson does not retail junk-shop pedagogical dogmas, axioms, and formulated principles. He presents a mass of material that is certain to command the thoughtful attention of students who seek first-hand investigations; and, of a number of good recent books on the principles of education by Thorndike, Rüdiger, and Bagley, this new work by Professor Henderson appeals to the reviewer as unmistakably the best. The book has a very satisfactory bibliography and an excellent index.

WILL S. MONROE.

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JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. July, 1911. *Conférences générale du congrès de Bologne. Rapport de la philosophie aux sciences* (pp. 417-435): E. BOUTROUX. — This problem admits of no simple solution. The relation of philosophy to science is surely contingent, for philosophy does not live exclusively in systems. It is a product of reason which helps science and life to attain self-realization. *Jugements de valeur et jugements de réalité* (pp. 437-453): É. DURKHEIM. — An attempt to show by particular example how sociology can contribute to the solution of a philosophic problem, and to dissipate certain prejudices against sociology. *L'évolution de l'espace et du temps* (pp. 455-466): P. LANGEVIN. — Our conceptions of space and time have a purely empirical origin and so are continually suffering modification with the progress of science. Here special attention is paid to the significance of modern kinematics for these concepts. *De l'objet réel de la métaphysique* (pp. 467-479): H. DE KEYSERLING. — The object of metaphysics is life in its totality and not merely organic life. *Règle et motif* (pp. 481-497): G. BELOT. — It is important to distinguish control and motive, which are usually confused and treated together by students of ethics. *La renaissance de la philosophie en France* (pp. 499-504): J. BENRUBL. — The characteristics of the new movement are a relativistic conception of science,

a reaction against the method of reduction (i. e., analyzing facts into mere complexes of sense qualities), an effort to transcend agnosticism, increasing sympathy with German post-Kantianism, a conviction that philosophy is a real prolongation of scientific, moral, and religious interests. *La recherche scientifique* (pp. 505-508): P. BOUTROUX. - Analysis and synthesis must not be confounded. It is through the former that what is new in science comes. *Rapport de la logique et de la linguistique* (pp. 509-516): L. COUTURAT. - An auxiliary language should be a logical selection from the materials furnished by linguistics. *Théorie des idées confuses* (pp. 517-522): E. DUPRÉEL. - The distinction between clear and confused ideas can serve to bring out the relations of sociology to logic and philosophy. *Théorie nouvelle du raisonnement déductif* (pp. 523-525): É. GOBLOT. - The theory is that "to deduce is to construct." *Parallélisme formel des sciences normatives* (pp. 527-532): A. LALANDE. - A tabular paralleling of logic, ethics, and esthetics. *Fichte et les décrets de 1788* (pp. 533-540): X. LÉON. - Historical study from unedited fragments of Fichte's actual attitude toward church and state at the time specified. *La philosophie comparée* (pp. 541-548): P. MASSON-OURSSEL. - Comparative philosophy is the study of the philosophic ideas of different nations and civilizations. *D'où convient-il de commencer l'arithmétique?* (pp. 549-554): A. PADOA. - The characteristic of the domain of arithmetic should be excluded from the domain of logic to avoid a confusing fusion of the two. *Intuition et raison* (pp. 555-559): D. PARODI. - Intuition is distinguished from reason as giving immediate and individualizing knowledge. *Pour le réalisme de la science et de la raison* (pp. 561-567): A. REY. - Science is a *seeing* of things as they are and so must be realistic. *Le problème de l'infini* (pp. 569-578): A. REYMOND. - The insurmountable difficulties of the infinite as treated by Zeno for the Greeks shook their confidence in science and were an important factor in bringing about its decline in Greece. *Déduction et induction* (pp. 579-592): D. ROUSTAN. - A criticism of current definitions. *Les valeurs esthétiques de la lumière* (pp. 593-596): P. SOURIAU. - A program of technical and theoretical researches to be carried out concerning this most important esthetic element. *La loi des trois états et la loi des deux états* (pp. 597-603): L. WEBER. - A criticism of Comte's law of the three stages and a substitution for it of a law of two stages expressing the rhythmic alternation of an active and a reflective stage in the progress of civilizations. *Remarque sur la théorie kantienne de l'espace* (pp. 605-609): C. WERNER. - An objection to Kant's "universally admitted" theory of the apriority of space. *Note sur l'infini en mathématiques* (pp. 611-616): M. WINTER. - It is better to limit oneself to speaking of solving certain aspects of the problem of infinity and not to talk about solving the problem as a whole. *Compte rendu générale. IVe. congrès international de philosophie*: H. NORERO. *Supplément*.

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- Dessoir, Max. *Abriss einer Geschichte der Psychologie*. Heidelberg: Carl Winter. 1911. Pp. xiii + 272.
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- Meredith, James Creed. *Kant's Critique of Æsthetic Judgment*, Translated, with Seven Introductory Essays, Notes, and Analytical Index. Oxford: Clarendon Press. 1911. Pp. clxx + 333. 10s. 6d.
- Münchener philosophische Abhandlungen. Theodore Lipps zu seinem sechzigsten Geburtstag gewidmet von früheren Schülern. Leipzig: Johann Ambrosius Barth. 1911. Pp. 316. M. 8.
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- Webster, Hutton. *Rest Days: A Psychological Study*. *University Studies*, Lincoln, Nebraska, Vol. XI., Nos. 1-2. 1911. Pp. 158.
- Yerkes, Robert M. *Introduction to Psychology*. New York: Henry Holt & Co. 1911. Pp. 427.

NOTES AND NEWS

DR. J. HUGHLINGS JACKSON, F.R.S., the eminent English neurologist, died on October 7, aged seventy-six years. We quote the following from a brief appreciation of him published in *Nature* for October 19: "Step by step we can watch the growth of his great generalization put forward in the Croonian lectures of 1884 on 'Evolution and Dissolution of the

Nervous System.' He showed that in hemiplegia movements and not muscles were affected, for the brain is not dealing with tools but with functions. Thence he passed to the idea of 'levels' in the nervous system, each of which represented a higher evolution; passage from one level to that above it was always from the general to the special in function, and from the simple to the complex in structure. Dissolution produced by disease or by experiment occurred in the inverse order, and the removal of the highest level set free the activities of those below. To this view Jackson gave the widest application, and explained the rigidity of limbs paralyzed from cerebral disease by the over-action of uncontrolled centers in the cerebellum and spinal cord. So far back as 1877, he laid down that 'the cerebellum is the center for continuous movements and the cerebrum for changing movements,' and so formulated the modern doctrine of the tonic nature of cerebellar activity."

ACCORDING to the *Rivista di filosofia neo-scolastica* for October, the Catholic Institute of Parigi has proposed for the Hugues prize of 2,000 lire the thesis: "The Value of Pragmatism as a Religious Doctrine. Define the different forms of Pragmatism, distinguish the elements of it which concern religion, and evaluate them." The competition closes on the first of March, 1913. The same periodical announces that the *Accademia di scienze morali e politiche* has announced a prize of 2,000 lire for the year 1912 for the best essay on the topic "Pragmatism, Its Origins, Principal Forms, Meaning, and Value."

MR. DAVID JENNESS, of Balliol College, Oxford, shows his devotion to science by planning to spend a year, unaccompanied, among people who are admittedly cannibals. According to the *London Times*, several of the colleges of Oxford are contributing to support Mr. Jenness in an anthropological research expedition to the islands of Normandy, Fergusson, and Goodenough, in British New Guinea.

THE program of lectures and discussions arranged by the Child Study Society, London, for October-December includes the following: October 19, "Coeducation during Adolescence," Dr. A. Beresford Kingsford; November 2, "Psychology and Grammar," H. Holman; November 9, "Psychology of Speech," Professor W. Rippmann; November 23, "Psychology of Reading," T. G. Tibbey; December 7, "Psychology of Mathematics," Dr. W. Brown.

A NEW university is to be founded at Perth, Western Australia. Mr. Cecil Andrews, who represents the commission charged with carrying out the project, is at present visiting the universities of this country.

WE take pleasure in adding to the list of our exchanges *La ciencia tomista*, a bi-monthly publication of the Dominican friars of Spain. We note that the first number received is No. 10.

THE death is announced of M. Alfred Binet, director of the psychological laboratory of the University of Paris.

PROFESSOR E. B. HOLT, of Harvard University, has leave of absence for the present academic year.

DR. MCGIFFERT'S "Martin Luther: The Man and His Work" is now announced by the Century Company for immediate publication.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

ART AND INDUSTRY

FINE art may be defined as skilled production which pleases. The word *ars* originally signified the act of joining, as in carpentry or masonry. It then came to mean skilful joining, and finally stress was laid upon the character of the workmanship judged by canons of its own, rather than by considerations of the ultimate utility of the object produced. Many artists admit that both industry and art require skill, but hold that this skill is expended in different directions: in the case of industrial art, to the end of producing something useful; in the case of fine art, the creation of something which gives satisfaction in and for itself. This view frequently implies that the useful and the beautiful are mutually exclusive: not merely that certain objects are beautiful and others useful and that in rare instances they may be at the same time both beautiful and useful, but that the highest form of beauty is uncorrupted by any utility.

I

Mr. Brown, in his valuable little book on "The Fine Arts," says that art is freedom in skilled production. Artistic activity is "indulged in for its own sake, and not under the pressure of any material needs." Art is play "in the sense that it is a free and spontaneous activity, not serving a directly useful end, but having its rise in a state of ideal excitement. We are not driven to its practise by any outward or inward compulsion." Freedom here, however, does not mean getting away from all ends, from all definite motives and particular meanings. Free artistic activity does not mean aimless activity. An activity is free when it has found a relatively adequate embodiment, a medium of expression which is approximately organic with its own significance or end—free in the sense that it is controlled from within rather than from without.

Historically art is an expression of the unusual skill made possible by leisure, by comparative relief from the fierce immediacy of the struggle for existence. But even this skill of leisure operates

under conditions: it is dependent upon naturalistic, technical, religious, practical motives, and is an expression of popular feelings and ideals. Whenever we say that skilled production comes to be valued for its own sake, we mean that the artistic form so adequately expresses the naturalistic, technical, religious, practical, or other content that it seems its inevitable embodiment. Only because it is thus organic is it esthetically satisfying.

Freedom means, not that production is esthetic in proportion to its uselessness, that is, in proportion to its freedom *from* the various motives mentioned in the preceding paragraph, but in the sense that the artistic activity embodies these motives so adequately that the stress and tension characteristic of other modes of consciousness are lost in the ease and spontaneity of the esthetic repose. Art is not simply primitive wonder and mystery idealized, nor is it a mere by-product of the reflective process: it is a central fact and legitimate outcome of any experience. Its spontaneous character is the outcome of relatively automatic action, of habits that have been mediated in consciousness until the intellectual processes involved have become comparatively smooth and familiar. Carlyle seems to have had this idea in mind when he said that one does not do a thing perfectly until he can do it unconsciously. But in the case of art this is true only in a relative sense, since absolutely automatic action would be unconscious and therefore not esthetic. The esthetic-artistic consciousness exhibits experience in the process, as it were, of just slipping over into the unconsciousness of automatic action.

Artistic activity is autotelic, controlled by habits and ideals operating from within. The beats of a bird's wing, the bounds of an antelope, the steps of a graceful woman, succeed each other with beautiful smoothness, says Mr. Brown, but they are not artistic unless there is "an inward control." The raw material of this rhythmic activity must be "disciplined into a certain distinctness of form by the principle of 'order' till it becomes a rational product." In other words, smooth, rhythmic action is not artistic and esthetic save as the expression of an idea or meaning. If, however, this idea is present in too immediate or direct a way, the activity becomes practical or scientific, or takes some other non-esthetic form. The end must not be too explicitly or too strenuously present. It must already have been so well organized into the activity that it has attained a certain ease and freedom of operation.

On the other hand, this ease and freedom always presupposes a previous mediation of the idea or meaning in consciousness: it is the freedom of habitual rather than of instinctive action, and this is the fundamental distinction between play and art. When we say that an activity has become its own end or is carried on for its own sake,

we mean, therefore, that it has become relatively habitual. The wonderful technique of artistic detail which characterizes Japanese art is no accident: it is to be explained in connection with the skill required for the graphic reproduction of their language. Only such deeply ingrained habits can become freed for artistic purposes. The reason for the dominance of naturalistic motives in hyperborean art is to be found in the fact that these motives stand for the deepest habits of the every-day life of these people in their struggle for existence.

When a comparative leisure has been won by a relative relief from the economic struggle for the necessities of existence, the motor habits that have been built up in connection with these activities persist in the form of unconscious or semi-conscious instincts and impulses urgent for expression. The motor tendencies remain long after the occasion for their economic use has disappeared, and they seek outlet in other modes. What more natural than that these habits of skilled production of implements of warfare and industry should overflow into the embellishment and reproduction of these very forms in the more ideal ways which we find expressed in art?

Experience becomes esthetic when its processes have been carried to the point at which the symbols used are an approximately adequate expression of the meaning symbolized. The esthetic pleasure which primitive peoples take in their weapons and tools lies in the recognition of their relative fitness of form to their purpose. As long as they did not serve such purpose with a degree of success, attention would be directed to their manufacture—there is no leisure and no surplus of skill to devote to embellishment. But once, by their use, let there be won a superabundance of food, of shelter and security, and the success feelings connected therewith are read over into these objects and they become beautiful. This would seem to embody the truth of William Morris's saying that art is an expression of man's joy in his labor, and of Schiller's remark that in the esthetic field we see man playing at his work.

The beauty of nature also is capable of a rational interpretation from this point of view. Those natural objects or processes are beautiful which are an approximately adequate realization of the end which they suggest or imply. As Fechner phrased it in his law of economy, that is esthetically pleasing which is physiologically correct and the expression of the least possible friction and constraint. By analogy, the physical environment, especially animal and plant forms, become beautiful because the pleasurable feelings connected with gaining mastery over them are read over into them. Thus we see both the objects and the instruments of the primitive struggle for existence lifted to the esthetic plane by reason of the opportunity for

free contemplation and reproduction of them made possible by the leisure and skill won in connection with this very struggle.

II

We have here what Professor Gore has very aptly called "the esthetic survival of a formerly useful occupation." Attention has frequently been directed to the originally utilitarian or practical basis of most of our esthetic appreciations and art productions. "All esthetic activities are rudiments of some useful function," says Spiller. "The appliances of one era serve as embellishments to the next," says Spencer. The latter writer goes on to point out that our parks, kept as nearly as possible in a state of nature, perpetuate what had only utilitarian associations in the mind of primitive man. A picnic is "a temporary return to an aboriginal condition." The tyrannies, feuds, and narrow escapes which were quite prosaic realities to a previous age furnish material for literary treatment to-day. "The once useful but now purely ornamental heraldic symbols" illustrate the fact that "nearly every notable product of the past has assumed a decorative character." "Every one," says Professor Gore, "has probably experienced the kind of esthetic gratification one has in doing over again, under very different conditions, something that was originally distasteful, or in living over again in the imagination something that in the first place was a hardship."

The question naturally arises: Why this estheticizing of past utilities, why this metamorphosis of the useful into the beautiful? Why does distance in time, as in space, lend enchantment? What, for example, is the significance of the fact that the decline of manual labor in the industrial world is accompanied by the advance of manual training in the educational world and by the enhanced value of hand-made products in the artistic world? Or, to turn it about, what is the meaning of the fact that with the advance of manufacture in the industrial world, manufacture has become a fine art?

The question is answered by saying that activities originally utilitarian become esthetic when they are performed with relative ease, and optionally, by reason of being freed from the necessity of serving the more immediate biological or economic needs. We continue to carry out reactions which, though no longer indispensable to life, are yet agreeable when performed because they are deeply ingrained as habits, the functioning of habits within normal limits being pleasurable. It is pleasurable because it is easy; it is easy because it is familiar and habitual; it is esthetic because, in addition to this, it has a comparatively rich content of meaning and associations and is therefore stimulating.

Propensities and customs, funded during long periods of time,

are not so readily changed as the external conditions of the situation, hence there is a certain momentum of habit over into the new environment and even a tendency to assimilate the environing objects and activities to deep-seated apperceptive systems. It is requisite, however, if originally utilitarian activities and objects are to persist as esthetic, that they shall make sufficient demand upon the attention to be stimulating. Where this is not the case, the reactions tend to become automatic and the objects to pass unnoticed. As Professor Gore says, it is a matter of comparative indifference as to whether the arbiters of taste will continue to fill their houses with hand-made furniture, hand-made books, and hand-made bric-a-brac. The real question is whether this represents a mere repetition of the thing which it is easiest to do, or represents a constructive insight into the real essence and evolution of culture.

III

The same principle explains the fact that the luxuries of yesterday become the necessities of to-day. The electric button, the telephone, the bicycle, the automobile, refinements of the toilet and cuisine which once were superfluities enjoyed only by the rich, become the unheeded instruments by which men press forward to ever more discriminative values. Here, too, if the activity is capable at once of a wide range and a fine detail of adjustability, or if the object is rich in suggestiveness and associations, it may survive this mechanizing effect of familiarity: physical exercise of the recreative sort and beauty of feature in the human face are examples of such survival. But in general the relativity of esthetic appreciation to the evolution of organic needs is appalling until we reflect that by this same process are also being evolved the finer appreciations of a higher level.

Spencer says: "Whatever is performing some active function now, or has very recently performed one, does not possess the ornamental character; and is, consequently, inapplicable to any purpose of which beauty is the aim." And Grant Allen writes: "The esthetically beautiful is that which affords the maximum of stimulation with the minimum of fatigue or waste, in processes not directly connected with vital functions." According to Professor Fite, "the esthetic or practical character of a want, the beautiful or useful character of an object, the artistic or industrial character of a form of activity, depends upon the extent to which it constitutes a fundamental feature in one's organized system of habits." "Nothing that appears in human life is completely unrelated to the organic processes," but "some impulses are more nearly related to the life-process than others." "We have, therefore, instead of an absolute distinc-

tion of esthetic and practical realities, a graded continuum, with the distinctively practical at one end in the needs more nearly organized into a system, and the purely esthetic at the other in those least related to the organic system, while between the two are those whose esthetic or practical character is a matter of doubt." "The transformation of esthetic tastes into relatively organic needs appears, then, as one of the features of this process." "The process of evolution means . . . a constant elaboration of wants. . . . As a new impulse makes itself felt, and a new object is desired, it has first the appearance of the ideal and the beautiful; then, as the impulse becomes more imperative, the object becomes finally a necessary element in the life-process itself." The dress-coat, moderate bathing and sanitary appliances, fine China and table linen, changes of plates for different kinds of food, a good speaking voice, harmony in combinations of color, etc., are thus passing from the sphere of luxuries into that of daily necessities. "Thus it happens that needs that were at first purely esthetic and, as Kant puts it, disinterested, become interested and organic and hardly less necessary to the life-process than food or sleep."

Here we have the converse of the law of esthetic survival. There is but one stricture to be made. It is not true that the esthetic qualities and activities are less organically related to the life-process than the practical and industrial. The differentia lies, not in the degree of their organic relationship, but in another characteristic. The esthetic exhibits the culmination, the relative perfection, of such organization, the differentia lying in the fact that the qualities called beautiful are less stressfully related to the life-process: it is when the relationship is at once most organic and relieved of painful stress while yet stimulating, that the conditions are present for its becoming beautiful.

"The aim of industry is to live well," says Professor Santayana; therefore it flowers naturally into art. "Liberal arts bring to spiritual fruition the matter which either nature or industry has prepared and rendered propitious." "Art is simply adequate industry; it arises when industry is carried out to the satisfaction of all human demands, even of those incidental sensuous demands which we call esthetic and which a brutal industry, in its haste, may despise or ignore."

Industry, as we are most familiar with it in this age of commercialism and machinofacture, has a double or at least an ambiguous motive. It aims above everything else to produce as many objects as possible of a given kind as cheaply as possible, for the sake of the margin of money profit. Only in comparatively rare instances does the motive consciously operate of producing something as perfect as

possible irrespective of cost. Under such conditions we may sympathize with the feeling of the artist and esthete, that fine art has very little to do with industrial art and is dependent upon some "vision from the blue" rather than upon any principle intrinsic to industry as such.

But however much we may extenuate the feeling, this point of view is wrong, so far as method is concerned, when art is set in a relation of antagonism to industry: this would be to kill the goose that lays the golden egg. Fine art is a direct outgrowth of good workmanship: it is fineness of skill. Industry gives us as directly as possible the product useful for the immediate economic end: this may be hard and harsh and ugly. But art is this same industry, not in such a hurry about the result, taking time to refine and soften and finish its creations in pleasing forms. In the words of Professor Dewey, "When the imagination is brought to bear on the work of the artisan, making it the expression of a thought, and when there is perfect union between the thought and the expression, the result is art."

What the primitive man falls to doing under conditions of enhanced emotional consciousness naturally follows the lines of native gift (instinct) and acquired skill (habit), expressing themselves in outbursts of impulsive activity. He whittles out a shaft and chips a flint tip as he has under the stress of the practical exigencies of the chase. But he whittles the arrow differently now. His exalted emotional state is reflected in his work. There is a back-stroke or return-wave of what on the negative side may be interpreted as the pleasurable sense of relief and leisure and freedom that come from the suspension of the struggle to supply the immediately pressing needs of the organism, what on the positive side may be regarded as the momentum of habit with the pleasurable consciousness of triumph, the success feeling, that comes from the sense of adequacy and spontaneity in operating along the lines of skilled and habitual response. There is a retroactive effect upon the utilitarian and industrial processes, giving them an enhanced value for appreciation, and thus finally a more propitious form in production. Art, in other words, is the back-stroke of industry upon itself, the recoil of the skill of its method upon its own subject-matter, the reflection upon nature of the impassioned light in the countenance of science.

IV

The individual and personal touch in a work of art simply represents the climax of this adequacy in skilled production. It is not essential that a work of art should be produced immediately by the human hand. What difference does it make whether you interpolate

between the artist and his medium a pen, a brush, a chisel, or a complicated machine run by steam or electricity? Nor need a work of art be wholly the product of one individual. The important point is the adequacy of the expression, not the personality of the individual who happens to be the last link in the chain of productive activity. Individuality, significance, characteristic quality, not personality, is the differentia of fine art. There is no limit to the use of machinery in artistic production, as long as such machinery fulfils its true function as a mere extension of the motor organs of the artist. It is not the fact that an object is produced by machinofacture rather than by hand, nor the fact that it is a copy mechanically reproduced, that renders it less artistic; its artistic quality depends on whether it is an adequate expression of a meaning, not on the character of the means by which it is produced. The introduction of steel beams and girders into the structure of modern buildings does not render them less artistic if this change in structural character is reflected in the decorative detail: the bad art lies in covering up this wonderful web of structural lines with a superficial veneer of brick and stone modeled on past types instead of developing its own artistic potentialities. The same principle applies to mechanical music and photography—indeed to all the modern applications of machinery to artistic production. The fear of vulgarization is groundless. Art is not degraded by becoming public and social. It is the relative inadequacy of the methods of reproduction that leads artists to deplore the multiplication of copies of the great masters.

The reason the machine-made article is not artistic is because it gives you a type without individualization: the universal is not particularized in an individual case. For many purposes it would be absurd to substitute hand-made for machine-made articles, just because the end is adequately met by the latter—congruously in relation to current standards. But until a man can more organically express himself through the machine than is now ordinarily the case, the machine-made product will not be regarded as art. It is not only conceivable, however, that the time will come, but there are evidences that the machine is already becoming in some fields, such as magazine illustration, a more adequate expression of man's meanings than any of the old manual techniques.

"It is impossible to believe," as Mr. Bosanquet says, "that just as the sense of beauty has become deeper and stronger than ever before, the productive capacity of art has received its death-blow." "Even machinery has its good tidings for us, if rightly used. Many of the reforming estheticians seem to me to forget that it is worse to do by hand what can be well done by machinery, than to do by

machinery what can only be done by hand. In the latter case you try to make a machine do a man's work, which is impossible. In the former you make a man do a machine's work, which is immoral. Whatever can be done (that is properly done) by machinery, ought to be done by machinery. The present system combines both evils. But what is needed is not to join the ranks of the machine-breakers, but to draw the line rightly between mechanical and non-mechanical production. Some critics are fond of saying that we make nothing well but the instruments of war. They omit one class of appliances, the instruments of science. A compound microscope of the present day is one of the greatest triumphs of intellect in workmanship that the world has ever seen."

Beauty, in a word, is only a higher usefulness—utility seen at arm's length. Life without industry may or may not be guilt, but industry without art is certainly brutality. The aim of art is not only to tell the true thing but to adorn the useful one. Anything which is well adapted to its purpose is on the verge of becoming beautiful. The idealization of industrial activities and objects in art forms means that they are to be humanized, socialized, and generalized in their cosmic significance. The limitation of industrial art as it is carried on by the artisan, usually through no fault of his own, is that he does not see the cultural value of what he is doing: he is ignorant of the relation of the particular manipulations which he is compelled to make to the other steps in the process and to the finished product. The artisan may become an artist only by coming to see the significance of what he is doing in relation to the nature of the materials with which he is working and in relation to the uses to which the product is to be put in the total life of society. This is all that is necessary to bring out that instinct of workmanship which is the very essence of the creations of fine art. If socialism will do this for industry, as Mr. H. G. Wells thinks, then socialism will inaugurate a new era of fine art.

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PRAGMATISM AND SOCIAL SCIENCE

THE field now occupied by the social sciences, morality, logic and philosophy was in the eighteenth century regarded as one discipline and discussed from a single viewpoint. Out of the common traditions of this old moral philosophy the various social sciences and types of philosophy have arisen. There are many views in the various fields that show the influence of the common background from

which they were all derived, yet the specialization invoked by the example of the physical sciences has produced the dominant tendencies found in them. Each group has its own associations and organs, goes its own way, and sets its own standards. This isolation has brought some advantages and many evils. To divide a common field into parts leads to accurate knowledge of details, but it destroys the basis on which action depends. There is but one society and all are parts of it. Any conclusions we draw apply to the whole society and are verified in the daily actions of men, not penned up within some narrow precinct.

It is the emphasis of premises instead of consequences that has divided the old moral philosophy into so many parts. Each so-called science has its special premises from which, by a chain of reasoning, an artificial man, society, or nature is constructed. The so-called economic man and the economic society in which he is supposed to exist are good illustrations of this tendency. Each special science has such an artificial man and views society in the same cramped way. There is no other manner in which premises can be traced and made to seem as dominant as is demanded by the special science in question.

This emphasis of premises is due to the success of Newton's proof that gravitation is the cause of the movement of the heavenly bodies. All the scientists of the latter part of the eighteenth century were filled with wonder at the boldness of this generalization and sought through a corresponding premise to attain the same result in their field. Kant was as much under the influence of this idea as were Ricardo and Comte. Modern rational tendencies could not have arisen but for Newton and his law. As a result we have the isolation now manifested in the various social sciences and philosophy, each with a creed and none with the power to survey the whole field of human action. Physical science can isolate and experiment; social science can not. It must therefore begin with consequences and move back to origins. A comprehensive view is the only one that can successfully carry through this reverse movement.

The present situation is made for us by these facts. The prime obstacle to future progress is the isolation of workers into special groups, each with premises of which they feel sure, but with few conclusions of import to the great social unit of which we are parts. Against this isolation of workers a reaction has set in, with the result that in each field there are insurgents in revolt against conclusions drawn from the meager data that each special science affords. The contrast of "stand-patters" and insurgents, now so familiar in politics, represents the attitude found in every science. The conservatives rejoice in the emphasis of old truth and hold rigidly to the divisions that the past century has devised. The insurgents, however,

are partly held by the charm of the old thought, and yet so discontented that they break through its logic and reject its data at particular points. It is the weakness of insurgency that it occupies a false position due to its adhesion to the old in principle, while breaking away from it in matters of detail. If the whole antecedent scheme with its logic and methods is overthrown, the new is no longer insurgency, but a rival scheme with its own logic and data. Such a reconstruction stands ahead of us, but is not yet realized in any field. The insurgents still regard themselves as economists, sociologists, moralists, or philosophers, depending on the discipline, education, or consciousness of kind that binds them to the group in which they find themselves.

As insurgents, each group of objectors is bound to fail. It is only as they get outside of the narrow precincts of their special sciences and unite on a common platform that they can drive home the changes in social thought in which all are interested. Virtually the same contest is to be found in every field. Under different names the same ideas are being enunciated, and they all express, each in his own way, the opposition to traditional thought upon which their insurgency is based. I have been fighting for twenty years as an insurgent in economics. It is interesting to see the ways in which the conservatives have fought off the change that must inevitably come. They have yielded just enough to avoid defeat, and yet managed to hold every essential doctrine in their creed. Several times I thought their position was undermined, but each time, through a new alignment and the seizure of new terms to express old ideas, they have won a victory. This is the inevitable result of fighting old thought with its own weapons. The insurgent stirs up a temporary commotion, but finds that no permanent change follows.

My present interest has been aroused by finding that the pragmatists have within the camp of the philosophers been fighting the same battle that I as an economist have fought with my colleagues. And I believe that if they fight with philosophic tools and accept its precedents they will suffer the defeat that other insurgents have met. The grip of intellectualism is too strong to be broken by guerilla warfare. Only when the insurgents break the bonds that hold them to their various groups and unite on common grounds can they avoid the detailed defeat that each group by itself must face. We need a new social science, a new philosophy, and a new mental discipline which will face the facts of to-day without the presuppositions the old thought imposed.

To face these problems successfully demands a clear enunciation of the principles on which knowledge depends. Knowledge is either a structural problem based on certain data, or it is a genetic problem,

in which case its social origins must be laid bare. I say *social* consciously, because the mass of our knowledge we derive at second hand from the society of which we are members. Acquired knowledge is not a part of our heredity nor is its data ever fully presented to the senses. Each generation impresses its thought, language, and civilization on the next. The social process on which the continuation of this knowledge depends is outside of individuals and acts according to its own laws. A child growing up in such a society has his ideas shaped and the content of his knowledge determined by the contrasts and agreements which the social process presents and enforces. The mass of our knowledge is derived from our civilization and not from personal experience. The testing of acquired knowledge by individuals is incomplete, and could not of itself be made the basis of its reliability.

At this point, I wish to give a definition which, if accepted, will do much to clear away the confusion that exists. *Truth is a judgment about acquired knowledge.* Each person, as he is incorporated into society, has presented to him for acceptance the social knowledge upon which civilization depends. If he doubts the individual who imparts it, to him it is a lie. If he doubts the correctness of the social process by which knowledge is passed along in society, the imparted information is regarded as an error. Errors are social; lies are personal. Together they make up the data that are contrasted with truth.

This definition of truth conforms closely to social usage, although narrower than that given by philosophers. It has the advantage of confining truth judgments to one type of knowledge and thus enables us to set up definite criterions for its determination. All knowledge, however, is not acquired. In addition to the social process, there are two natural processes, the sensory process that gives us *facts* and the motor process that gives us *values*. If we limit truth judgments to acquired knowledge, knowledge is divided into three parts, each of which is given by a separate process. Truth judgments are made of the content of the social process; fact judgments are made of sensory material and value judgments depend on motor data. In every-day usage as well as in philosophic discussion, these distinctions are disregarded, but with a loss of clearness. Do we, for example, add anything to a fact by calling it a true fact? We may be uncertain whether a given sensory presentation is a fact or not, but the judgment we make is a judgment not of its truth but of its clearness and simplicity. Facts are the elements of our direct knowledge and always depend on the evidence of the senses. The mistakes we make in this regard only become truths or falsehoods when society acts on them and they thus become a part of the social process.

Values as contrasted with sensory facts are evidence of motor activity. They are judgments about the means to ends. There can be no values without ends towards which activity goes out. Utility and value are not the same, although closely related. If there is no obstacle to the acquisition of an object, it would have no value even if it had great utility. A free good, though enjoyable, has no value. From another viewpoint, a value is an economy of effort. We tend towards that form of activity that gives the greatest return for the least effort. A mode of action that reaches ends by the most available route is valuable to the actor and through it beliefs are generated that impel the act. Values expressed as judgments are beliefs. We have faith only in what we have done or in what society assures us can be done.

All knowledge is thus either truths, facts, or values, each of which is the product of a separate process. Imparted knowledge is truth, perceived knowledge is fact; knowledge acted on is value. Can we reduce these classes further and thus reduce all knowledge to an ultimate test? This is the problem on which present discussion turns. It is also evident that some simplification can take place, because truth (acquired knowledge), while carried along by the social process, must have had some origin outside of it. It is easy to see how knowledge of this kind is carried along from generation to generation and imposed on each individual in turn, but this does not account for it. The original data out of which truth arose could not have been gained from the social process itself, but must have come from one of the natural processes through which alone direct contact with nature is given. Truth in its origin must either have arisen from sensory perceptions and hence derived from facts, or it must be based on the motor activity that it generates and hence be a value. Is the test of truth antecedent facts or subsequent activity aroused by its perception? This is the problem that divides philosophers into hostile camps.

In this statement of the truth problem I have not tried to present anything new. What I have sought to do is to define truth in a way that makes a decision possible. If truth is defined as a value or as a fact, the definition determines what truth is and ignores a great mass of knowledge not coming clearly under either head. The social process gives us most of our knowledge, and about it our truth judgments are made. Is it not better to define truth in terms of this acquired knowledge and thus leave open the question whether it depends on sensory facts or motor consequences? Both of the disputants would thus have a fair chance to prove they were right by successfully accounting for acquired knowledge.

To decide this question we must put ourselves in the attitude of

a child who gets his knowledge from others, rather than in that of an investigator who tries to face nature directly. The power to investigate comes after society has given to the investigator the main data passed on from generation to generation by the social process. Judgments about what we receive from others are made earlier than those we make about our direct relations to nature. What tests, therefore, can we set up in relation to this acquired knowledge which comes to us certified by our elders, superiors, and teachers? In my opinion, the primary test of knowledge derived from others is the logical test of consistency. If two things told us are consistent, we accept them. If they disagree, we reject one of them. Logic is our most frequently used test of truth. By it we determine what we can assimilate and what we must reject. But it is not our only test: A second test is to be found in its origin of ideas. That which several judgments have in common is more firmly established than that which depends solely on its consistency. Consistency relates to the content of what others give us: agreement is the relation between what we now get from others and the body of experience and knowledge already acquired. We judge our present acquisitions of knowledge by that already assimilated and made a part of ourselves. The truth is thus at first judged by its consistency and then by its agreement with earlier knowledge. In this way we get a primary and a secondary test of truth, and through them we judge the great mass of acquired knowledge given to us by our predecessors.

While, however, consistency and agreement are our most commonly used tests of truth, they are not its final test. The end of knowledge is activity. For knowledge to become truth it must guide the recipient in the acquisition of desired ends. All new or dynamic truth is reached in this way, and to the test of workableness all truth must finally come. It is only the static, imitative element in society who are never conscious of using this test. They are so thoroughly socialized that they take what society gives and never question its authority. A static thinker is conscious only of testing the logical character of his thought. He can neglect the test of activity only because the knowledge he accepts has been tested so many times by the activity of his predecessors who have already made static knowledge logical and harmonious. He who goes beyond the accepted social beliefs of his day must also go beyond mere consistency and face nature through his activity. The final test of truth is thus the action it evokes. Belief is truth transformed into motive, and motive generates the will-power to reach its ends. Belief, truth, and action are thus bound together, and all of them are tested by the consequences they bring.

The preceding discussion assumes that knowledge is derived from

three processes, each of which has its own test and criterion of correct judgments. The social process puts us in contact with society and enables us to appropriate its accumulations and products. The psychic process gives to us the facts of perception upon which our knowledge of the external world is based. The motor process promotes adjustment and gives value to all workable knowledge. Truth, facts, and values are the three elements of knowledge, each certified to by its special process. Dogmatism consists in the attempt to make some one of these tests absolute. A monistic standard means the denial of the other two, and to get this unity skepticism must first be employed to discredit other standards. Social dogmatism accepts the traditions of society and will accept nothing as truth but what is based on authority. Psychic dogmatism takes perception as its ultimate criterion, and rejects all social data not derived from psychic phenomena. This, if carried to an extreme, is radical empiricism. Structural dogmatism accepts principles as its ultimates, and builds up the universe out of them. This, when fully worked out, becomes transcendentalism. Motor dogmatism makes values the basis of knowledge, and rejects all doctrines that fail to meet the test of activity. All these creeds are plainly defective if knowledge is not derived direct from nature, but comes to us as products of three coordinate processes. While skepticism may confuse, each of these processes will in the end make valid its claims, and thus put the various kinds of knowledge on terms of equality. Truth is not a perception, but a judgment on socially imparted data. Facts are not truth, but are perceptions certified to by our sensory mechanisms. Values, likewise, are results of our motor inheritance, and get their validity from the series of successful adjustments through which our heredity was built up.

Reality and truth are not identical, but are distinct problems. Truth is the product of a process. Reality is antecedent to all processes, and can not be derived from any one of them. Do the ultimates of our knowledge correspond to the ultimates of reality? This is a vital problem, but it is not the same as the problem of truth, which, when correctly put, asks: Shall I or shall I not accept the knowledge derived from others and certified to by them? An answer is demanded to both these questions, but only confusion can arise from trying to blend them into one or from attempts to settle both of them by the same data.

It is the answer to the second question that brings pragmatism and social science into harmony. If truth is not a perception but a judgment of acquired data, its discussion involves all the problems that lie back of social science. On the other hand, as social science leaves behind the data of its concrete sciences and looks into the

processes by which its facts are given, the social scientist must become a philosopher and treat the antecedents of knowledge as well as its manifestations. A simple but united viewpoint can thus be obtained which will blend the various groups of insurgents into one body, with one method and one measure of truth. Pragmatism must become more than pragmatism to succeed, for the truth relation can not be settled apart from other fundamental problems that recent progress has forced modern thought to face. Pragmatism, sociology, economics, and history are not distinct sciences, but merely different ways of looking at the same facts. The logic, the method, and the mode of verification are the same in all of them. They all must accept consequences as the ultimate test of truth, and these consequences are measured in the same broad field of social endeavor. To gain this end, the intellectual reliance on premises must be broken. There is thus a clear issue between the new and the old. Is truth measured through its consequences or through its antecedents? Is thought static or dynamic? Is the mind a structural unit or a genetic growth? Shall investigation proceed positively from data or skeptically from analysis and differentiation of ideas? In different terms and in many ways these questions are being asked. They all lead back to a common ground and demand the same solution. When they are answered, human thought will have advanced into a new stage and the obstacles to social progress will be much reduced.

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DISCUSSION

EXISTENCE AND FORMAL LOGIC

IN this JOURNAL for August 31, 1911, Professor Marvin propounds a new definition of the notion of "existence" in "terms of formal logic." He arrives at this by means of an analysis of the distinction between the propositions that constitute formal or "non-existential" science and those that constitute factual or "existential" science—a procedure which perhaps has a certain *prima facie* appearance of circularity. The definition thus reached I am not sure that I correctly understand; taken literally it appears to be either tautological or else inclusive of its own negation. It runs as follows: "The existent is the asserted sufficient condition of any true proposition; and accordingly a term is said to exist when it is a member of a proposition that is the asserted sufficient condition of some true proposition." By a "sufficient condition" of a proposition the context indicates that Professor Marvin means a proposition which is so

related to another proposition that the latter either implies it or is implied by it. Thus the *dictum de omni* would be a "sufficient condition" of the more specific rules of the syllogism; for they are true propositions which it implies. It does not, however, appear to be a proposition which Professor Marvin would classify as existential. It is evident, therefore, that the essential differentia of "the existent," as expressed in the proposed definition, lies in the word "asserted": the existent is an *asserted* sufficient condition. One inquires, therefore, what "asserted" here means. Obviously it can not mean "asserted to be true"; for that would, once more, apply equally to propositions of merely formal and "non-existential" truth. Yet in the passage (p. 478) where the adjective "asserted" is first introduced and partly explained, it seems to mean "asserted to be true." For the difference between existential and non-existential science is that the latter consists of propositions such as " p implies q , where we do not know whether or not p [itself a proposition] or q are true," but know only the correlation of the truth of p [whenever it happens to be true] with the truth of q . Though non-existential science is *about* propositions which are not asserted, the propositions which it makes about those propositions *are* by it asserted; it is indifferent to such a science whether p and q are true or false, but it is not indifferent to it whether the statement " p implies q " is true or false. But since the sense in which the term "asserted" is used in making the distinction between existential and non-existential science will not, as we have seen, fit into Professor Marvin's definition of the existent (as "the asserted sufficient condition of any true proposition"), the reference to that distinction does not help us to understand what "asserted" does mean in the latter formula. The only remaining sense, indeed, which readily suggests itself, is "asserted to exist" or "involving an assertion of existence"; but this, of course, in a definition of "existence," would be a pure tautology. One can not suppose, therefore, that Professor Marvin uses the word in either of these senses. Since the kernel of his whole definition is contained in the word, I hope he will tell us in what third sense he wishes the word to be understood.

But though the terms of the definition offered remain somewhat obscure, certain things that seem sufficiently clear in Professor Marvin's enterprise appear to me to justify a doubt concerning the feasibility of defining existence "only in terms of formal logic." Two of these difficulties I venture to try to set forth.

1. Two species of existential proposition are enumerated: "The first is of the form p implies q where p is asserted, the second is of the form q is asserted, p implies q , hence p is asserted." These species, furthermore, appear to be regarded as exhaustive of the

genus determined by the definition. From this it would follow that all existential propositions are propositions about implication—the implication of one proposition by another. This, of course, does not give the whole account of such propositions; it gives only their *generic* character. Their specific character, or *differentia*, as we have seen, is, for Professor Marvin, that one of the two propositions, about whose relations of implication the existential proposition makes an assertion, must be given from the outset as itself “asserted”; and the difficulty about this *differentia* has already been noted. But in any case, the generic part of the definition of a term is an essential part; and thus the proposed definition declares that existential propositions, by their essential nature, always deal with the implications between other propositions—that this is what they *mean*. This seems to me a paradoxical conclusion. I should have supposed that by “existential propositions” one meant propositions in which existence (whatever that may be) is predicated of something; that the subjects of which this predicate may be affirmed are not necessarily themselves propositions, but may be all kinds of concrete things, persons, or events; and that, whatever else this predicate may signify, the mere logical relatedness, by way of implication, between two propositions (even if one of them is “asserted”) is peculiarly remote from what “we mean when we use the word ‘exist’ in daily life, in science,” or even “in philosophy.”

2. Professor Marvin (if I get the meaning of pages 490–491) holds that to make assertions about a past existence is “but to assert that data are now at hand” which “imply or are implied by” that past existence. Though he notes that some may regard these present data as constituting rather the ground than the meaning of our existential judgments about the past, he himself appears to find in this distinction no valid reason for rejecting the view indicated. And this view is apparently conceived to follow from the proposed definition of “existence.” It is thus implied that an assertion that something existed in the past of which no conclusive traces now survive would be an assertion void of meaning. It would, doubtless, be an unverifiable, and therefore unreasonable, assertion; but why should one call it meaningless? The proposition: “Queen Elizabeth married Dudley, but all the material evidence of the ceremony was destroyed, and all the witnesses, direct or hearsay, are long since dead,” would doubtless be a queer proposition for an historian to lay down, since by its own terms it would be incapable of proof. But surely it would be an existential proposition; it would have meaning, in the sense that every one of its terms, and their affirmed relations, are intelligible, and even that one could tell what sort of present data would be requisite in order to enable one to decide as to the truth or

falsity of the main assertion about the marriage ceremony. No concepts appear to be more clearly and confidently distinguished by our minds than that of the *meaning* of a predicate, and that of the *verifiability* of a proposition in which the given predicate is affirmed or denied of a given subject. And I can not see that any persuasive reason is offered for supposing "past existence" and "now verifiable past existence" to be a whit less distinct in meaning than are, say, "squareness" of a non-perceived object, and "now verifiable squareness." Perhaps what Professor Marvin means is that the assertion of a proposition about the past implies the truth of that proposition, and that *truth* is identical with verifiability. But we all suppose many propositions about the past to be true of which the truth can not be established; their unverifiability is never regarded as proof of their untruth. A definition of existence which requires us to give up this distinction seems to me a doubtful boon.

These difficulties, I think, arise, in spite of the admirable logical ingenuity which Professor Marvin brings to the argument, from the inherently unpromising nature of his undertaking. Formal logic is itself a non-existential science; it of itself asserts no existences, but only implications, and it does not care whether the terms of the propositions with whose implications it deals are existences or not. In this sense, therefore, it is a realm to which the whole notion of "existence" is alien. It is accordingly a rather unlikely place in which to look for aid in the elucidation of that notion. And such aid as may seem to be had there will probably be found to have been surreptitiously introduced (probably by means of a logical circle) from outside its boundaries.

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REVIEWS AND ABSTRACTS OF LITERATURE

Clever Hans (the Horse of Mr. von Osten): A Contribution to Experimental, Animal, and Human Psychology. OSKAR PFUNGST. With an introduction (and four supplements) by C. STUMPF. Translated by CARL L. RAHN. With a prefatory note by James R. Angell. New York: Henry Holt & Company. 1911. Pp. vi + 274.

A demonstration of the working of animal association-processes and the difficulty of their proper interpretation, more spectacular and at once more conclusive than Mr. Pfungst here presents, has yet to be recorded. His account may be read with the interest of an exciting novel, and yet with great and lasting profit by any one at all interested in animal behavior or in the problems of animal consciousness, whether his interest be that of the comparative psychologist, the naturalist, or the mere lover of domestic animals.

A retired teacher in one of the German gymnasia, of gentle birth, having an income sufficient for his maintenance, rather eccentric in his tastes but no seeker after notoriety, and without a family, made of a four-year-old horse his pet and almost his sole companion. Having become convinced in some way of the horse's conceptual ability, he undertook to teach him to count, and later to do arithmetical sums, from simple addition to square root, indicating the answers by tapping with the right fore-foot. In the beginning, large wooden "duck-pins" and the corresponding arabic figures were set before him; the number was spoken, and he was "put through" the process of tapping until he could "read" or "name the number" correctly without this assistance. He was then taught similarly to express the relation between numbers—*e. g.*, two *and* five is seven. After these processes had been mastered, Hans was next made to "learn" the alphabet, the letters being arranged in tabular form and placed before the horse, who was taught to indicate by tapping the place in horizontal and vertical rows of each letter. From this to simple "reading" and "spelling" was a short journey. Color discrimination came next, in which colored cloths were used. The horse was taught first to indicate by tapping the position in a row of cloths of the one to be chosen, and then to bring it to the questioner in his teeth. By a similar method he also "learned" the rudiments of musical harmony, informing his questioner by tapping the components of a chord; responding by head movements affirmatively or negatively to such questions as "Pleasant?" or "Unpleasant?" and showing by tapping the tones which must be changed to effect harmonization.

After four years of "education" along this line, the horse exhibited a proficiency in response to questions both from his owner and from strangers, which gained him the attention of all Germany, and made him the subject of scientific discussion and popular theorizing. Several educators soberly pronounced him the rival in intelligence of a normal child ten to twelve years old. Animal trainers and scientists both looked in vain for evidence of trickery; and his owner, who enjoyed the confidence in his honesty of all who knew him, steadily refused enormous sums offered him for Hans, and would not allow him to be exhibited for gain.

At last, in September, 1904, a committee of thirteen men, in the personnel of which were included a circus manager, a veterinary surgeon, two prominent German zoologists, two educators, and two psychologists of recognized ability—Professors Nagel and Stumpf—spent two days in investigating the horse's behavior. During part of the tests, the owner retired. At the completion of the work, the committee signed a report saying that anything in the nature of "tricks—*i. e.*, reaction to intentional signs"—was "out of the question." Further, that in their opinion, "unintentional signs of the kind at present familiar" were "likewise excluded." Also, that Mr. von Osten's method of education "has little in common with methods of training, and is patterned after the instruction given in the elementary schools"; that the case appeared "in principle to differ from any hitherto discovered," had "nothing in common with training in the usual sense of the word," and was "worthy of a serious and incisive investigation."

In November and December, 1904, a second committee, Mr. Pfungst, our author, with Dr. E. von Hornbostel and Professor Stumpf, made some further tests, in which it was found that when the horse was called upon to answer a question the answer to which was unknown to the experimenter or to any one present, he responded successfully in only 8 per cent. of his chances; while otherwise he succeeded in about 98 per cent. This at once gave rise to the suspicion that the horse in some manner was getting his cue from the experimenter or from a bystander. The next question was, What kind of cue?—*i. e.*, visual, auditory, or what not. To eliminate, first, the possibility of the horse's reacting to visual signs, he was made to wear huge blinders, which excluded from his field of vision the experimenter, who now stood behind. The horse was now utterly helpless, and his taps were made at random. The movements thus shown to have been formerly perceived were so slight, however, that only after very close observation on the part of all present were they discovered, and then by Mr. Pfungst. They proved to be very slight movements of the head, due to changes in tension of the neck-muscles, ordinarily below consciousness. In the horse's early training they were doubtless more easily sensed, however, because his master then wore habitually a hat with a very broad brim, the edge of which would describe a much greater arc than the head itself. The answers to questions expressed by head movements were found to be reactions to similar movements unconsciously made by the questioner. When these movements were inhibited, as they could be after once being noticed, the horse reacted as much at random as when the experimenter was hidden.

Mr. Pfungst here carried into the laboratory the problem of these unconscious body movements in situations of expectant interest, and obtained some very interesting results as to their character—direction, magnitude, controllability, etc. Observation, conscious or unconscious, of such changes in attitude, has doubtless spoiled many a laboratory experiment, where procedure is intended to be "without knowledge," and has also made possible the success of many a gambler and "medium."

A pathetic incident of the investigation was the grief and indignation of Mr. von Osten when the facts were laid before him. He felt, despite the expressions of confidence in his good faith published by the experimenters, that his character had been questioned and his years of work wrongfully discredited, for he could never bring himself to accept their conclusions. At his death, which occurred not many months later, he was doubtless yet unaware of the service which he had unwittingly rendered to a young science.

From one or two loosely written sentences of Mr. Pfungst, an uninitiated reader might suspect that in his opinion, because these tests had disclosed no such evidence, the horse is without color vision, "musical ability," etc. It should be hardly necessary to remind our readers that no tests worthy of the name have yet been made on color vision in the horse—or, at any rate, none have so far been published. Some crude

qualitative tests on his cousin, the ass, would indicate that the latter is quite sensitive to differences in pitch.¹

An unfortunate point in the history of this investigation is a priority claim by Dr. Albert Moll,² whose published assertion is that more than a year before the report of the first committee, of which Professor Stumpf was a member, he made some tests on Hans which showed conclusively that whenever "procedure without knowledge" was had, every question elicited an incorrect response; from which he concluded that Hans was reacting to some slight involuntary and subconscious movements, such as often become the bases of suggestibility in hypnotic subjects. This conclusion he alleges he reported to the Psychological Society of Berlin, of which Professor Stumpf was a member, between the signing of the report of the first committee, in September, 1904, and the discovery reported in the following December. Conforming to the standards of etiquette accepted by so many of our German friends, Professor Stumpf in his part of the book refrains from any specific mention of Moll's allegation, although he remarks with some show of irritation that several obscure irresponsibles (in which class few of his fellow-scientists would place Dr. Moll!) had attempted to discredit him. He also uses several pages in both introduction and supplements in attempting to disprove Moll's charge that he, Stumpf, had believed at the close of the first investigation that *all* "unintentional signs" had been excluded, and that to some "telepathic agency" must the explanation of the horse's behavior be assigned. This latter feature of the controversy, into which has been injected the question of veracity or of perverse misunderstanding, does scant credit to either of the parties.

Mr. Pfungst has made a lasting contribution to both human and animal psychology, which can not be passed over lightly by any serious student in either field. Mr. Rahn's translation was a difficult task, but it has been creditably performed. The typographical appearance of the book is excellent, although a few errors slipped undetected through the proof-reader's hands. In the reviewer's opinion many readers will thank the author, the translator, and the publishers for the appearance of the work in English.

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The Philosophy of John Norris of Bemerton. FLORA ISABEL MACKINNON.
Baltimore: The Review Publishing Company. 1910. Pp. 104.

This treatise belongs to *The Philosophical Monographs* series, of the *Psychological Review* publications. It is a clear and well-organized account of the philosophy of John Norris (1657-1711), rector of Bemerton, England, from 1691 until his death.

The author regards the philosophy of Norris as worthy of our interest

¹ Otto Kalischer, "Weitere Mitteilung über die Ergebnisse der Dressur als physiologischer Untersuchungsmethode u.s.w.," *Archiv für Anatomie und Physiologie, Physiologische Abteilung*, 1909.

² "Hypnotism," New York, Scribner's, 1910, pp. 455-458.

because it expresses certain characteristics of its age and of the approach toward later idealistic theories. His "Theory of the Ideal or Intelligible World" is "the only clear expression in English of the philosophy of the transition between dualistic and idealistic conceptions." Because of its internal inconsistencies his philosophy "can not be accurately classified as either idealism or dualism. Its whole tendency is obviously toward a system of absolute idealism." Norris stands in an intermediate position between Descartes and Locke, on the one hand, and Collier and Berkeley, on the other. Norris approaches uncritical realism in that he refuses to give up the traditional opposition of mind and matter, and "the conception of consciousness as necessarily representative of, though unconnected with, something that is beyond consciousness." His approach toward idealism is seen in his rejection of all arguments for the existence of matter, and in his "insistence on the intimate union of every finite mind with the mind of God." Collier and Berkeley made the step in advance which distinguished the thought of the eighteenth century from that of the seventeenth. "In the theory of Norris we find the tentative trying of the ground, which was the necessary preliminary to that advance."

After devoting a few pages to the life of Norris, the author presents Norris's philosophy under three main headings: (1) "The Ideal World"; (2) "The Natural or Material World"; (3) "The Objects of Knowledge." His system in its final form is found in his book entitled "An Essay towards the Theory of the Ideal or Intelligible World. Designed for two Parts: The first considering it absolutely in itself, and the second in relation to Human Understanding." The three main points of his system are: (1) the ideal world exists, (2) it is identical with the mind of God, and (3) it is connected with our minds as the source and object of knowledge. With reference to these three points the monograph states: "The first shows the origin of Norris's philosophy in that of Plato, the second its close connection with Neoplatonism and the theology of St. Augustine, and the third, its particular relation to the theory of Malebranche."

Norris's "Ideal World" is timeless and changeless, a realm of absolute ideas independent of the natural world. He follows Plato in distinguishing between the sensible and the ideal world. Norris says that the ideal world contains "eminently and after an intelligible manner, all that is in the natural world . . . whereof all things in the natural world are but as the prints and impressions; I might say the shadows." Norris uses several specific arguments for the existence of the ideal world. One of these is based upon the idea of creation. The plan of the natural world was objectively present to the mind of God. The object of God's thought was not the natural world, for it did not yet exist. The real object of God's thought was a preexisting nature, which was exhibitiv and representative of the things in the natural world. Another argument for the existence of the ideal world is based upon mathematics. Mathematics presupposes perfect circles, squares, etc. These are not found in the sensible world, hence they must be in an ideal world. Norris uses another proof that might be called an argument from the nature of truth. He believed that there is absolute and necessary truth and that whatever is necessary

must be eternal. Objective truth means certain habitudes or relations of things to one another. If these relations are eternal, those simple essences, natures, or things whose relations they are, must also be eternal. These eternal essences can not exist in a sensible, changing world. Hence they do exist in an immutable, ideal world. Science treats of things not in their natural, mutable, contingent state, but in their ideal or intelligible state. The ideal world consists of ideas and eternal truths, but Norris finally identifies truth with ideas. He also identifies relations with their subjects and terms.

Norris regards the ideal world as in the mind of God. It is not the whole nature of God, for it is purely intellectual, while the nature of God includes will as well as understanding. God has in himself the "Ideas" of all things, for out of God "there is nothing but what is temporal, mutable, limited and contingent. The perfection and infinite wisdom of God imply the identity of the ideal world with the mind of God. But this ideal world is not dependent on the will of God, for "Ideas" are not producible, they are eternal, necessary, and immutable. Necessary truth is not the effect of God, but is God. God exists, for eternal ideas exist, and they can exist only in an eternal mind. Norris also argues from the possibility of God's existence to his actual existence.

Concerning the natural or material world, Norris held the existence of this realm to be less evident than that of the ideal world, for the former is contingent, and the senses do not give us certainty. We do not understand matter; it is "utterly dark, invisible, and unintelligible." Matter is distinct from spirit and can not act upon it. But Norris held that matter is not to be denied, though incapable of proof. The essence of body is extension, and extension is not a sensation, but an idea, perceived by the intellect. The material world is a copy of the ideal world, and the latter is the essence of things as at present existing. Matter is invisible, unknown, and unnecessary.

The third and last part of Norris's philosophy treated in the monograph is his epistemology. For Norris, knowledge is something absolutely fixed and stable. Thus on the nature of truth he is no pragmatist. He says: "Knowledge is the perception of truth, or of those ideal relations, wherein truth consists." The object of knowledge is incorporeal. Sensation can not be knowledge. The possible objects of knowledge are God, finite spirits, and material things. We can know God, for he, being perfect, is most intelligible. No mediating idea is required in order to know God. Norris is not definite and consistent concerning our knowledge of ourselves and other finite spirits. As to our knowledge of the natural or material world, he holds that material objects are not perceived in themselves, "and therefore we must see and perceive them as they are in their ideas." We see all things by their intelligible representatives existing eternally in the mind of God. In perceiving a particular object we have a sensation caused by God. We also have an idea. This idea is continually existing in God's mind, and he by an act of will permits us to see it at the moment when sensation is aroused. The idea is of extension only—all other attributes are merely sensation.

Norris's philosophy was influenced by three main factors: "the idealism of Plato, as traditionally conceived, the theory of Malebranche, and contemporary English philosophy."

An appendix to the monograph contains biographical notes on the Cambridge Platonists and on Malebranche, and a bibliography of the works of Norris. The style of the monograph is clear, logical, and forcible. The treatise is an excellent presentation, summary, and criticism of this philosophy of a transitional period.

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JOURNALS AND NEW BOOKS

AMERICAN JOURNAL OF PSYCHOLOGY. July, 1911. *Thermal Intensity and the Area of Stimulus* (pp. 325-332): SARAH E. BARNHOLT and MADISON BENTLEY. - Thermal intensity may depend on the number of temperature organs stimulated, for the warm and cold seems more intense on large areas. The strength of the sensation is determined by the most highly tuned organs involved. Intensity of large areas seems to be due to the favorable conditions for conduction. *Consciousness under Anesthetics* (pp. 333-345): EDMUND JACOBSON. - A report of experiences under the influence of nitrous oxide and air. Struggling, groaning, and reactions of that kind may be conscious, even though not remembered afterward. *On the Intensity of Images* (pp. 346-368): ALMA DE VRIES SCHAUB. - A laboratory study of images in which it seems that they have an intensity quality much like sensations. *Color Sensations of the Partially Color-blind* (pp. 369-407): SAMUEL P. HAYES. - A thorough study of a case of partial color-blindness with a general discussion on defective color vision. Partial color-blindness is not identical with dichromatism. Selected bibliography. *Recent Freudian Literature* (pp. 408-443): RUDOLPH ACHER. - This series includes extensive reviews of the following: S. Freud, *Eine Kindheitserinnerung des Leonardo da Vinci*; Oskar Pfister, *Die Frömmigkeit des Grafen Ludwig von Zinzendorf*; Max Graf, *Richard Wagner im "Fliegenden Holländer"*; Ein Beitrag zur Psychologie des künstlerischen Schaffens; S. Freud, *Die zukünftigen Chancen der psychoanalytischen Therapie*; Ueber "wilde" Psychoanalyse; Die psychogene Sehstörung in psychoanalytischer Auffassung; Ueber den Gegensinn der Urworte; Beiträge zur Psychologie des Liebeslebens; J. Sadger, *Aus dem Liebesleben Nicolaus Lenaus: Schriften zur angewandten Seelenkunde*; S. Ferenczi, *Introjektion und Uebertragung*; E. Jones, *The Action of Suggestion in Psychotherapy*; A. A. Brill, *A Contribution to the Psychotherapy of Everyday Life*; J. J. Putnam, *Personal Impressions of Sigmund Freud and His Work*; Karl Abraham, *Giovanni Segantini, ein psychoanalytischer Versuch*. *Terminology in the Field of Sensation* (p. 444): KNIGHT DUNLAP. *Book Reviews*: A. Wreschner, *Das Gedächtnis im Lichte des Experiments*; S. POWER. Louis Lombard, *Observations d'un musicien américain*: J. FIELD. A. Lemaître, *La vie mentale de l'adolescent*

et ses anomalies: FRANCIS JONES. E. E. R. Mumford, *The Dawn of Character: A Study of Child Life*: O. PERLER. Wilhelm Wundt, *Kleine Schriften*: E. B. TITCHENER. *Handbook of American Indians North of Mexico*, edited by F. W. Hodge; G. Fowke, *Antiquities of Central and Southeastern Missouri*; Frances Densmore, *Chippewa Music*: J. FIELD. Ikbal Kishen Sharga, *Examination of Professor William James's Psychology*: S. POWER. Elizabeth Morison and Frances Lamont, *An Adventure*: J. WATERLOW. C. R. Lomer, *The Concept of Method*; I. Scott, *Controversies over the Imitation of Cicero*: W. FRANCIS. O. Bumke, *Ueber die körperlichen Begleiterscheinungen psychischer Vorgänge*: FRANCIS JONES. Ottmar Rutz, *Sprache, Gesang und Körperhaltung: Handbuch zur Typenlehre* Rutz: A. ISAACSON. A. Gregor, *Leitfaden der experimentellen Psychopathologie*: W. ASHER. Robert Hichens, *The Dweller on the Threshold*: WM. ERSKINE. Joseph McCabe, *The Evolution of Mind*: P. E. WINTER. J. Mourly Vold, *Ueber den Traum: experimental-psychologische Untersuchungen*: J. FIELD. Caleb W. Saleeby, *Parenthood and Race Culture: An Outline of Eugenics*: C. R. HUGINS. Hudson Maxim, *The Science of Poetry and the Philosophy of Language*: MARLOW A. SHAW. Nos. 12-19, *Bibliothèque de psychologie expérimentale et de métapsychie*: JAMES FIELD. Havelock Ellis, *The World of Dreams*: OTTO PERLER. *Book Notes. Dr. Edmund Montgomery.*

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NOTES AND NEWS

ALL friends of anthropology will rejoice to learn that after an interval of some years Professor Baldwin Spencer has resumed his researches among the aborigines of Australia. The following particulars as to his work and his plans are extracted from a letter addressed to Dr. J. G. Frazer on the 13th of last September. The Commonwealth government of Australia is about to undertake measures for the settlement of the Northern Territory, and during the present year it sent a small party to make preliminary investigations in that region. The leadership of the party was entrusted to Professor Baldwin Spencer. They went to Port Darwin, and thence across to Melville Island; then they returned to Port Darwin and traveled south about two hundred miles, after which they crossed the continent to the Gulf of Carpentaria. Amongst all the tribes examined by the expedition the belief in the reincarnation of the dead is universal; and the same is true of the notion that sexual intercourse has nothing, of necessity, to do with the procreation of children. "The latter fact," says Professor Spencer, "is interesting, because we now know that this belief exists amongst all the tribes extending from south to north across the center of Australia." On the other hand, Professor Spencer found among these northern tribes none of the *intichiuma* or magical ceremonies for the multiplication of the totems which form so important a feature in the totemism of the central tribes; nor could he discover any restrictions observed by the natives in regard to eating their totemic animals and plants. "The absence of *intichiuma* ceremonies," he adds, "is doubtless to be associated with the fact that the tribes in the far north live under conditions very different from those of the central area. They never suffer from drought or lack of food supply. This seems to show that the *intichiuma* ceremonies are a special development of tribes that live in parts such as central Australia, where the food supply is precarious." In one or two tribes along the Roper River a very curious totemic system was discovered. Among these people a man must marry a woman of a particular totem, but the children take a totem different from both that of their father and that of their mother. For example, a man of the Rain totem must marry a woman of the Paddymelon (a species of small kangaroo) totem, and their children are of the Euro (a species of kangaroo) totem. Again, a Porcupine man marries a Lizard woman, and their children are Bats. In these tribes each exogamous class has certain totems associated with it, and the natives are convinced that the spirit children know into what woman they must enter, so that the offspring shall have the proper totem. Everywhere, too, among the tribes met with by the expedition, the women and children believe that the sound of the

bull-roarer is the voice of a great spirit who comes to take away the boys when they are initiated; but during the initiatory ceremony, when the boys are shown the *churinga* for the first time, they are informed that the noise in question is not made by a spirit, but by the *churinga*, or bull-roarer, which was used in the past by one of the mythical ancestors of the tribe. Lastly, Professor Spencer could detect among these tribes no trace of anything like a belief in a supreme being. On the whole, he considers that, with minor variations, the beliefs of these northern tribes are closely similar to those of the central tribes. Professor Spencer hoped to start about November 1 for another expedition to Melville Island, the inhabitants of which he is particularly anxious to study, as they are as yet virtually uncontaminated by European influence. His intention is to reside among them till February. All anthropologists will look forward with keen interest to the publication of Professor Spencer's fresh inquiries in this promising region. It is much to be regretted that his former colleague in research, Mr. F. J. Gillen, has been prevented by the state of his health from taking any part in these investigations.—*The Athanæum*.

MR. SALOMAN REINACH writes in the October number of the *Quarterly Review* of the present condition and progress of the science of mythology. He explains how the researches of Grimm and Mannhardt rendered insufficient such theories as those of Fontanelle, De Brosses, David Hume, and Dupuis, causing them to be succeeded by the speculations of Kuhn and Max Müller. After these came the theories of the present-day anthropological school popularized by Mr. Andrew Lang. The anthropological theories were more or less of a revolt against the philologists, due in part to the advance in philology itself. The colonial policy of England has provided also a fortunate influence in so far as it tended to expand the field of study beyond the Arian gods so as to take in the religions of savage peoples. The methods of the anthropological school, however, as practised by Robertson Smith and Mr. J. G. Frazier, are already disputed by psychologists and sociologists.

IN the course of lectures which Professor Bergson has just concluded at University College, London, the lecturer maintained that the functions of the brain are to form habits, to focus attention upon the material world, and to connect the present with the past. The sharp distinction between spirit and matter was deprecated, the only difference between them being, according to Bergson, a difference of duration.

PROFESSOR ALFRED BINET, whose death at the age of fifty-four years has been reported, was director of the laboratory of physiological psychology at the Sorbonne and was an enthusiastic student of the problems of child psychology. He founded *L'année psychologique* in the year 1898 and contributed many important articles of his own to that journal. His latest publication was "Les idées modernes sur les enfants."

A COLLECTION of essays by William James entitled "Essays in Radical Empiricism" is promised early in the year by Longmans, Green, and Co. The book is edited by Professor Ralph Barton Perry, who writes the preface.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

NOTES ON THE PHILOSOPHY OF HENRI BERGSON

I. ANTI-INTELLECTUALISM AND IMMEDIATISM

THE appearance almost simultaneously of English translations of Bergson's principal works¹ is significant of the author's rapid growth in fame and influence. All three translations have been revised by the author himself, and to the "Matter and Memory" he has contributed a new introduction by his own hand. Considering the peculiarly idiomatic character of the original text, the translations are admirable both in clearness and fidelity, and should make Bergson's philosophy readily accessible to the English reader.

Of the three, the "Matter and Memory" will probably receive the least attention, despite the fact that in the estimation of many of his colleagues it will remain his soundest and most rigorous contribution to technical philosophy. This book, especially in respect of its treatment of "pure perception," is comparatively realistic and naturalistic.² The "Time and Free Will," and "Creative Evolution," on the other hand, sound the more speculative note. They contain the assault upon "intellectualism," and the exposition of a metaphysical "dynamism," or "activism." On this side Bergson borders upon the voluntaristic and romanticist developments of German idealism. Together with Eucken, Rickert, and others, he is an advisory editor of *Logos*, the organ of the new idealistic revival. If Bergson is in this rôle less original and unique, he is not on that account less influential. He is identified with a present tendency which promises to be widely popular, and which is already in the ascendant in the thought and culture of Germany. As between the phi-

¹ "Time and Free Will," a translation of Bergson's "Essai sur les données immédiates de la conscience," by F. L. Pogson, Swan Sonnenschein & Co., 1910, pp. xxiii + 252; "Creative Evolution," a translation of "L'évolution créatrice," by Arthur Mitchell, Henry Holt & Co., 1911, pp. xv + 407; "Matter and Memory," a translation of "Matière et mémoire," by N. M. Paul and W. S. Palmer, Swan Sonnenschein & Co., 1911, pp. xx + 339.

² Cf. Ch. I., and the introduction to the translation.

losophy of immediacy and activity, which is already a gospel, and will shortly be a faith; and the philosophy of analysis, which is necessarily a critique, and to the most sanguine belief even a disillusionment, Bergson is flatly on the side of the former. In the comment which follows I shall have to do not with the psychological and biological Bergson, but with this speculative and prophetic Bergson. I shall deal in the present paper with his attack upon intellectualism, and in a second paper with his doctrine of freedom and creative activity.

Of eminent contemporary writers belonging to the pragmatist school in the broad sense, Bergson is the most radical "anti-intellectualist." In his opinion intellect not only divides and separates reality, thus replacing its concrete fulness with abstracted and partial aspects; but is doomed to failure, however far its activities may be carried. Intellect can not, in short, correct itself, and atone for its own shortcomings. The cause for this inevitable failure lies in the fact that intellect is essentially the instrument of action. For the purpose of action it is necessary to specify and fixate some present aspect of the environment. The object of action must be distinguished and held by the attention. Through the repetition of such attitudes the intellect elaborates a scheme, or diagram, in which the several terms of analysis are correlated. They remain distinct and external, but are woven by relations into a system, which is like its component terms in being stereotyped and fixed. The pattern of all such systems is geometry, the most perfect expression of the analytical method. The sign of the intellect's handiwork is spacial juxtaposition and arrangement, the static coordination of discriminated elements. In vain, then, does the intellect seek to correct itself—for the further it proceeds the more thoroughly does it reduce reality to this form.

And it is this form itself, and not any specific or incomplete phase of it, that is foreign to the native, aboriginal quality of reality. The latter abides, not in fixity, but in fluidity; not in sharpness of outline, but in adumbration; not in external juxtaposition, but in interpenetration; not in discreteness, but in continuity; not in space, but in time. The helplessness of the intellect to escape its own inveterate habits appears most strikingly in its treatment of time. For it spacializes even this, conceiving it as a linear series of instants; whereas real time is an *enduring* (*durée réelle*)—a continuous and cumulative history, a growing old. And this real time we do not *think*; we "*live it*, because life transcends intellect."³

Bergson's indictment of the intellectual method rests, I am convinced, on a misunderstanding of that method. In the first place,

³ "Creative Evolution," p. 46. Cf. Ch. I., *passim*.

Bergson is not clear as to whether a concept is to be distinguished by its function or its content. Is "concept" the same as "idea," or is it a special class of ideas? This question is of crucial importance. For if "concept" is only another name for "idea," and if an idea is essentially a function or office, and not a content, then the failure of concepts must mean simply the failure of the ideating or mediating operation of thought. But this operation, according, at least, to the pragmatist account, is essentially a mode of access to immediacy. The more it is perfected the more unerringly it leads us into the presence of its object. To prove that intellect is essentially instrumental, and then to attack it in behalf of the very end for which it is useful, would be a strange procedure. In fact the anti-intellectualist perpetually employs intellect in this sense, even with reference to "reality." He uses words and figures of speech which he hopes will conduct the reader or hearer to the immediate experience in which it is revealed. The anti-intellectualist would have no ground for maintaining that there is any reality which can not be represented, for he means by representation only a pointing or guiding, for which anything may serve. And whatever is experienced or felt can be represented in this sense, because it is necessary only that it should have a locus or context to which one may be directed.

We must suppose, then, that what the anti-intellectualist attacks is not the idea as such, but a certain class of ideas, such as the logical or mathematical ideas, "term" and "line." But it should be observed that for pragmatism the content of an idea is accidental. "Term" and "line" are ideas only when *used* in a certain way. In themselves they are simply characteristic bits of experience. They may be immediately known or presented, as well as used in discursive thought. Even "abstractions" may be apprehended by a direct act of discrimination, and it is only in such direct apprehension that their specific character is revealed. It can not be claimed that such bits of experience as "term" and "line" are peculiarly ill fitted to serve as ideas, because, as we have seen, the content of an idea is irrelevant. *Any* bit of experience will do, as is best illustrated by the case of words. In short the fault, if there be any, can not lie in the intellectual use of these elements; it must lie in their inherent character. The anti-intellectualist polemic must mean that reality is not such as "term" and "line"; or that these characters are somehow contradicted and overruled by the dominant characters of reality, such as continuity and life. But this contention rests, I think, on a second misunderstanding.

There is an inveterate liability to confuse a symbolized relation

with a relation of symbols. It is commonly supposed that when a complex is represented by a formula, the elements of the complex must have the same relation as that which subsists between the parts of the formula; whereas, as a matter of fact, *the formula as a whole* represents or describes a complex other than itself. If I describe *a* as "to the right of" *b*, does any difficulty arise because in my formula *a* is to the left of *b*? If I speak of *a* as greater than *b*, am I to assume that because my symbols are outside one another *a* and *b* must be outside one another? Such a supposition would imply a most naïve acceptance of that very "copy theory" of knowledge which pragmatism has so severely condemned. And yet such a supposition seems everywhere to underlie the anti-intellectualist's polemic. The intellect is described as "substituting for the interpenetration of the real terms the juxtaposition of their symbols";⁴ as though analysis discovered terms, and then *conferred* relations of its own. Whereas, as James, for example, has been at much pains to point out,⁵ terms and relations have the same status. Terms are found *in* relation, and may be thus described without any more artificiality, without any more imposing of the forms of the mind on its subject-matter, than is involved in the bare mention of a single term.

It is this misunderstanding which underlies the anti-intellectualist's contention that continuity can not be described. "For," says James in his exposition of Bergson, "you can not make continuous being out of discontinuities, and your concepts are discontinuous. The stages into which you analyze a change are *states*, the change itself goes on between them. It lies along their intervals, inhabits what your definition fails to gather up, and thus eludes conceptual explanation altogether."⁶ I can understand this argument only provided the author assumes that the intellectualist tries to reproduce continuity by *adding concept to concept*. The successive and discontinuous *terms of the representation* are then held to be contrary to the continuity of the subject-matter. But the assumption is incorrect. A line, for example, may be conceived as a class of positions possessing interrelations of direction and distance. This conception may be represented by the formula, *a . . . c . . . d . . . n . . .* One may then add the statement that between any two positions such as *a* and *c*, there is a third position, *b*, which is after *a* and before *c*; thus expressly denying that there is the same hiatus between the positions of the line as appears between the symbols of the representation. The use of the symbols *a*, *c*, etc., indicates the manifoldness and serial

⁴ "Time and Free Will," p. 134.

⁵ Cf., e. g., "A Pluralistic Universe," Appendix A.

⁶ *Ibid.*, p. 236.

order of the positions, and the statement defines their "compactness." With such a formula and such a statement one may *mean* continuity, despite the fact that the symbols and words are discrete. The word "blue" may mean blue, although the word itself is not blue. Similarly, continuity may be an arrangement meant by a discontinuous arrangement of symbols and words.

In the third place, the anti-intellectualist polemic is based upon the misconception that whenever concepts are used they must be used "privatively," in James's sense. In other words, it is taken for granted that all intellectualism must be "vicious," or blind to its own abstractness. James distinguishes this view as one variety of intellectualism. To conceive a thing as *a*, and then assume that it is *only a*, is to be "viciously" intellectual. But it is only fair to infer that, provided one recognizes that to be *a* does not prevent a thing's being also *b*, *c*, etc., one may be innocently or even beneficently intellectual. And this possibility Bergson, at any rate, appears to overlook. Thus he constantly argues as though the use of the relational logic involved the reduction of everything to it. The analytical method does imply that reality consists of terms and relations. It does *not*, however, imply that the bare term-and-relation-character is all there is to it. Thus blue is different from red, which is a case of $t'(R)t^2$. But in the concrete case the bare logical term-character, *t*, is united first with one quality, and then with another, while *R* is not merely relation in general, but the specific relation of "difference." And similarly the formulas of mathematics, mechanics, physics, etc., while they are cases of logical systems, have each their special superadded and distinguishing characters.

Thus the abstract logical system is non-temporal; but a temporal system may nevertheless be *a case* of a logical system, provided the time character be introduced. Hence it is absurd to say, as Bergson says, that "when the mathematician calculates the future state of a system at the end of a time *t*, there is nothing to prevent him from supposing that the universe vanishes from this moment till that, and suddenly reappears. It is the *t*-th moment only that counts—and that will be a mere instant. What will flow on in the interval—that is to say, real time—does not count, and can not enter into the calculation."⁷ I can make nothing of this, unless the author is regarding *t* merely as a *number*. But as a matter of fact *t* is a number of units of *time*, hence an interval, an extended flow; and multiplying this factor into the formula means that the whole process has continued *through* that interval—it means that the lapse of time is counted, is expressly brought into the calculation.

⁷ "Creative Evolution," p. 22.

Or, consider the same author's contention that to conceive time is to spacialize it. Again he is misled by supposing that because time is conceived as orderly, it is therefore *nothing but* order. Such an intellectualism would indeed be vicious. Bare logical order is static, and can never of itself express time. But it is an utterly different matter to regard time, like space and number, as *a case* of order, having the specific time *quale* over and above the properties of order. "Position," "interval," "before" and "after," are then to be taken in the temporal sense; and the terms of the series are to be taken, not as bare logical terms, still less as spacial points, but as instants possessing a unique time-character of their own.

Radical anti-intellectualism betrays, in short, a misapprehension of the analytical method. This method means simply the discrimination and specification of the detail of experience. It has led to the discovery and systematic description of certain elements and relationships that possess a remarkably high degree of generality, such, *e. g.*, as those of logic and mathematic. But while these elements and relationships, because of their generality, serve to make things commensurable on a comprehensive scale, and are consequently of a peculiar importance in knowledge, it does not follow that intellectualism aims to abolish everything else. That which *has* form is not *pure* form. Furthermore, it is entirely incorrect to suppose that intellectualism imposes the relational and orderly arrangement regardless of the subject-matter. The analytical method is not an accident or prejudice. It arises from the fact that the subject-matter with which science and philosophy deal is *complex*. And this is virtually admitted in every reference to it which anti-intellectualistic writers make. Continuity, duration, activity and life, present, even in the most immediate experience of them which it is possible to obtain, an unmistakable multiplicity of character. They may be divided, and their several characters abstracted and named in turn, because they *contain variety*. The anti-intellectualist is apparently ready to admit their multiplicity, but balks at admitting their "distinct multiplicity."⁸ But "distinctness" and "indistinctness" are psychological and not ontological differences. An "indistinct multiplicity" is simply a multiplicity that is as yet but imperfectly known, a distinct multiplicity in things, qualified by an incompleteness of discrimination.

But anti-intellectualism is involved in a more serious error. It not only misunderstands the view which it attacks; but it puts forth a claim of its own which is unfounded—the claim, namely, to the immediate apprehension of a fused and inarticulate unity. It

⁸ *Ibid.*, Introduction, p. xiv.

exploits what may conveniently be named the error of "pseudo-simplicity."⁹

This error consists in projecting a verbal or subjective simplicity into the object. The single word "life," *e. g.*, is used to refer to the complex *thing*, life. It is then assumed that behind the various characters of life, or infusing them, there must be a corresponding unity. Or, at the outset of inquiry life is a problematic unity, a bare *that*, a something-to-be-known; and it is assumed that this simple *quale*, this merging of elements not-yet-but-to-be-distinguished, must somehow be among the elements themselves. Now there are two ways of unifying experience. One way is to *carry analysis through*, and discover the connections of the parts and the articulate structure of the whole. The other is to reverse the operation, to *carry it back* to its vanishing point—to the bare word or the bare feeling of attention. In the second case the experience is simplified—by the disappearance of the object! A perfect simplicity, an ineffable unity, is attained at the point where the object drops out altogether. But then knowledge has ceased; and the experience, what there is of it, is of no cognitive significance whatsoever. Thus Bergson says: "The more we succeed in making ourselves conscious of our progress in pure duration, the more we feel the different parts of our being enter into each other, and our whole personality concentrate itself in a point."¹⁰ What Bergson is here describing is, I am convinced, the disappearance of cognition into an experience which is not an experience of anything at all. Such a unification may be obtained by falling asleep, as by auto-hypnosis. It throws no light whatever on the nature of anything. My experience of life has dissolved; but nothing follows concerning the nature of life. I have simply closed my eyes to it. I have blurred and blotted out my knowledge of life; but life is not therefore blurred or extinct. In the twilight all things are gray; in ignorance all things are simple. Bergson speaks of the "feeling of duration" as "the actual coinciding of ourself with itself";¹¹ and this, he says, admits of degrees. But I am not more alive when I feel duration than I was before when I thought it. The difference is that whereas I formerly knew duration, or something of it, now I know comparatively nothing; I simply *am* duration. Duration itself is neither more nor less complex than it was before; my knowledge only has been simplified—to the point of disappearance. Bergson speaks of an instinctive sympathy, which if it "could extend its object and also reflect upon itself," "would give us the key to

⁹ Cf. my article "Realism as a Polemic and Program of Reform," this JOURNAL, Vol. VII., No. 13.

¹⁰ "Creative Evolution," p. 201.

¹¹ *Ibid.*, p. 200.

vital operations."¹² But I believe that it is safe to say that in proportion as there is reflection upon instinct, its complexity is manifest, and that in proportion as instinct is simple, it has escaped experience altogether, and is, so far as cognition is concerned, nothing.

The critique of intellectualism tends to assume one or the other of two forms. Using Dewey's term "immediatism" to express this doctrine positively rather than negatively, we may say that there is a subjectivistic or idealistic version of immediatism and a realistic version of immediatism. The crucial issue upon which the idealistic and realistic versions of immediatism divide is whether the activity of the intellect is creative or selective. Does the intellect *generate* concepts, or does it *discover* them?

If we are to judge from the "Creative Evolution," Bergson regards the intellect as an artificer. In other words, ideas, things, objects, are essentially "the modalities of creative action."¹³ In the end they express not the environment but the agent. It is by no means clear that this is consistent with Bergson's view, that intellect is a means of adaptation. "If," as he himself says, "the intellectual form of the living being has been gradually modeled on the reciprocal actions and reactions of certain bodies and their material environment, how should it not reveal to us something of the very essence of which these bodies are made?"¹⁴ But this query does not prevent Bergson from deriving "intellectual form" from the intellect itself. The origin of it is to be looked for "in the structure of our intellect, which is formed to act on matter from without, and which succeeds by making, in the flux of the real, instantaneous cuts, each of which becomes, in its fixity, endlessly decomposable. . . . *This complexity is the work of the understanding.*"¹⁵ In other words, the *relational texture*, the *grain* of things, is generated by intellect. Given matter, not yet intellectualized, is pure flux, in its own substance as simple, smooth, and undivided as the life which acts on it—the life of which it is but the "inverse" movement.¹⁶ According to this view, then, to conceive is to bring into being that which is called concept. Conceptual definiteness is the derivative of the pure activity of intellect, and is in no sense contained in that upon which intellect operates.

According to the realistic version of immediatism, on the other hand, the intellect discovers, but does not make, concepts. This is

¹² *Ibid.*, p. 176.

¹³ *Ibid.*, p. 249.

¹⁴ *Ibid.*, Introduction, p. xi.

¹⁵ *Ibid.*, p. 250 (*italics mine*).

¹⁶ While the work of intellect is not absolutely creative, in that there is something on which it works, the latter would appear to be only a potentiality or negation.

the view that is on the whole consistently maintained by James. Concepts are not merely functions of the intellect, they constitute a "coordinate realm" of reality. "If we take the world of geometrical relations, the thousandth decimal of π sleeps there, though no one may ever try to compute it."¹⁷ "Philosophy must thus recognize many realms of reality which mutually interpenetrate. The conceptual systems of mathematics, logic, ethics, are such realms, each strung upon some peculiar form of relation, and each differing from perceptual reality in that in no one of them is history or happening displayed. *Perceptual reality involves and contains all these ideal systems and vastly more besides.*"¹⁸ The crux of the matter lies in this last statement. Reality is not *other* than the conceptual order, but *more* than the conceptual order. Intellect is an organ, not of fabrication, but of "discernment"; a power men have "to single out the most fugitive elements of what passes before them . . . aspect within aspect, quality after quality, relation upon relation."¹⁹

When thus construed, the pragmatist account of intellect is consistent with naturalistic grounds of pragmatism. Concepts work because the environment is presented and displayed in them. Since nature has logical and mathematical properties, it is expedient to act as though it had; while an intellect that was fatally predestined to falsify the environment would be as misleading to action as it would be inherently arbitrary and meaningless. And this realistic construction of concepts is entirely consistent with a censure of their blind and uncritical use. Because nature is logical and mathematical, it does not follow that it is *merely* logical and mathematical. Such an intellectualism is vicious indeed. The abstracting of *some* characters of reality is beset by a characteristic error, the error of ignoring the rest. This follows from the fact that intellect is *selective*; it in no way implies that intellect is creative. It is also true that in a sense the perceptual world is richer than the conceptual, since the latter is abstracted *from* it, leaving a residuum behind. James, it is true, goes further than this and contends, with Bergson, that there are some properties of reality, the "dynamic" or "temporal" properties, which can not be conceived.²⁰ But this is due, I think, to a misunderstanding. If to conceive is not to alter, but only to *distinguish*, then conceiving is not contrary to any property; to mention a property with a view to showing its inconceivability is to conceive it. And all properties stand on the same footing with

¹⁷ James, "Meaning of Truth," pp. 42 (note), 203.

¹⁸ "Some Problems of Philosophy," pp. 101-102 (italics mine). Cf. also *op. cit.*, p. 56; "Pluralistic Universe," pp. 339-340 (note).

¹⁹ *Ibid.*, pp. 51, 52.

²⁰ *Ibid.*, pp. 81, 101.

reference to the function of mediation. All may be known mediately; but to know them mediately is only an indirect way of knowing them immediately. This is as true of a mathematical triangle, which is mediately known by means of these words, as of color, life, or anything else. When corrected in the light of these considerations, the realistic anti-intellectualism of James escapes the verbalism and abstractionism of "vicious intellectualism," without that discrediting of analysis and lapse into uncritical intuition—that dissolution of order into chaos, which marks an even more vicious immediatism.

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PHILOSOPHY AND THE FLATFISH

THERE has recently appeared a monograph¹ by Francis B. Sumner, of the United States Fisheries Laboratory at Woods Hole, Massachusetts, which contains a number of facts important to all philosophers who are endeavoring to construct a new world-view. There are two reasons why these facts should be here reported and discussed: first, zoologists, under whose eyes alone the monograph is likely to fall, are unfortunately not interested in the philosophical implications of their *own* researches; and, secondly, philosophers mostly refrain from analyzing such *very* empirical matters as, say, the behavior of the flatfish, and distrust every other philosopher who dares wander so far from his own bailiwick, which is supposed to include little more than "pure logic" and "pure experiences." The consequence of this mutual aloofness is that most philosophers are very wretched biologists and most biologists no less wretched philosophers. When, therefore, a fact is brought to light which is absolutely unequivocal and empirically demonstrated and laden with implications about the nature of organic adjustments, percepts, and the perceiving process, it should be proclaimed.

Such a fact is found in Sumner's study. It interests me peculiarly because it completely confirms, by experimentation, the central point of my conclusions about the retinal image and the imitative reflex.² My own inferences were reached by an analysis of a few somewhat obscure psychological events. In order to follow the analysis, the reader had to observe those events with severe accuracy;

¹"The Adjustment of Flatfishes to Various Backgrounds," *Journal of Experimental Zoology*, Vol. X., No. 4.

²This JOURNAL, Vol. VII., pp. 92 and 204. The second of these papers was read, in part, before the American Philosophical Association, December, 1909.

but this seems to have been not at all easy, if I may judge from what few comments were passed on them. In Sumner's data, though, no such difficulty arises. Anybody can grasp them readily, and some of their implications force themselves upon whomsoever is at all familiar with the problems centering around perception. I need hardly say that these implications have not been drawn by Sumner.

The flatfish, like many other varieties, changes its hue to conform to the color of the backgrounds on which the creature happens to lie. For a time biologists supposed that this adaptation was effected by some direct photochemism—*i. e.*, by action of light upon the skin. But, a quarter century ago, Pouchet proved that it was brought about through the functioning of the eye. He found that blinded fish do not change their color adaptively. Interesting and significant as this discovery is, however, it does not tell us anything about the most astounding behavior of the flatfish, namely, its adaptation of its own geometrical skin-patterns to copy the geometrical pattern of the sea-bottom upon which it rests. By one of those freaks of circumstance which are only too common in all scientific fields, nobody paid serious attention to this phenomenon until Sumner approached it last year, first at the Naples aquarium and later at Woods Hole. "In observing a turbot," says Sumner, "I was impressed by the detailed resemblance which obtained between the markings of the skin and the appearance of the gravel on which the fish rested. . . . The query at once suggested itself: Is it a mere coincidence, or does the fish have the power of controlling the color *pattern* as well as the general color *tone* of the body?"

To answer this, Sumner prepared a number of backgrounds, some reproducing various types of natural sea-bottom (fine sand, coarse sand, fine gravel, coarse gravel, of various colors), and some being highly unnatural geometrical patterns (checkerboard, polka dot, stripes, screen, etc.). Placed in a tank having one of these patterns on its bottom, the flatfish began to copy the pattern *on its back*. ("Copying" does not imply "consciousness" or "effort," so far as the mere use of the word here is concerned.) The time required to complete the imitation varied.

This time ranged from a few seconds to several days. A change involving the almost complete withdrawal from view of the skin pigments in a dark specimen probably required the longest period. In general, . . . the maximum effect was commonly attained within one or two days at the most. The fact . . . that practise or habituation to these changes greatly reduces the time required was clearly shown. . . . Certain specimens, after several changes of background, were found to adapt themselves, in almost full measure, to one of these within a fraction of a minute.

The reader can not be asked to believe that some of the adaptations were so perfect that, in photographs, the flatfish is all but indistinguishable from the background; or that the spots on the skin became smaller when the diameter of spots on the background was reduced by less than a centimeter. To appreciate this, he must inspect the photographs appended to the monograph. Naturally, the imitation was by no means equally successful against all backgrounds. "Fixed morphological conditions" prevented the reproduction of perfect squares, triangles, circles, etc. It was, however, so exceedingly plastic and sensitive that "the notion that the fish is limited to a few stereotyped responses, representing the most familiar types of habitat, must be rejected at once."

The discoveries of greatest interest to the psychologist and the philosopher are still to be told. They are two: *first, the imitation is accomplished through the flatfish's eyes; and, secondly, only a part of the fish's visual field is involved in the process—the creature does not imitate everything it sees.* The first discovery might have been made by pure analysis. For, were the eye not the instrument of imitation, then we should have to assume that the light reflected up from the background acted directly on the skin. Against this, however, there are two objections: first, the flatfish's belly, which directly receives the reflected light, is *not* sensitive—*only the back, turned away from the reflected light*, takes on the patterns; and, secondly, as Sumner points out, "it is impossible to see how responses to a *pattern* could be brought about through any organs except the eyes, for these alone are provided with the lenses necessary for the production of images." The reader who suspects the analytical method, however, may ignore these proofs.³ For Sumner has demonstrated the matter by cauterizing the flatfish's eyes with silver nitrate, blindfolding them, or blinding them completely. So treated, the animal ceased altogether to imitate the background pattern, and its hue reverted to an even, dark shade "representing more nearly the resting state of the chromatophores."

The second discovery grew out of a series of experiments in which the walls of the tank were variously colored and patterned.

In the case of the *Rhomboidichthys*, . . . that part of the bottom immediately surrounding the fish appeared to be the one chiefly effective. . . . The influence of the vertical walls of the vessel commonly seemed to be a subordinate one, *even in cases where the fish was so large that it covered a considerable frac-*

³ The possibility that tactile stimuli may produce the effect can not be absolutely eliminated by pure analysis. Sumner has put it out of court, though, by the simple experiment of putting fish on glass bottoms, the under side of which was painted with patterns. The imitative reaction was *exactly as quick and as sure as ever.*

tion of the bottom and was obliged to lie constantly with its eyes close to one side or another of the jar. . . . What the fish saw directly overhead . . . seemed to exert a negligible influence upon the color pattern.

So much for the chief facts. Let us now consider their bearings upon the problem of space perception. Be it noted, first of all, that the imitative reaction is not seen by the flatfish—or at least only partially—and that Sumner has shown that the animal can adapt while its entire body (except for the eyes) is buried in sand or completely masked with a cloth or deeply stained. This renders it “highly improbable that any direct visual comparison on the part of the fish between its own body surface and the surrounding background is an essential factor in the production of these changes” (p. 470). In other words, “*consciousness*” (in whatever sense the term be used) is not an instrument in making one space pattern match another. If it is not, how can anybody continue to hold the old psychological doctrine that the arrangement of space-elements (or non-spatial-elements) into forms, patterns, or perspective orders is brought about in any degree by the cognitive process, or by the “association of ideas”? As with the imitative reflex among human beings, so here. The process is set up by a physical stimulus, and its result either can not or need not be perceived by the organism. *The correspondence, therefore, is not between the flatfish’s percept A and the same flatfish’s percept B; it is between a stimulus (which may or may not be perceived, for aught we yet know) and a chemical pattern which is the cause of a perception in an external observer.* In other words, the flatfish is not imitating merely its own percept A, but is doing so in such a manner that *some other creature will perceive the flatfish’s skin as having, not merely the characteristics of the fish’s percept A, but as having the characteristics of the external cause of perceiving A.* To make this last point clear, I must call attention to a highly significant fact which biologists have overlooked.

The flatfish’s eyes are very close to the sea-bottom, sometimes only a centimeter or so above it—as when it buries its body. It is while in this position that the eyes sense the shape, size, color, and arrangement of the sand and pebbles. These objects are therefore cast upon the retina in an extremely oblique perspective. You may get the general effect by holding your eye close to your desk and glancing across the latter. The foreshortening will be at a maximum; a few items in the foreground will loom up, while the converging of the rest of the field will be rapid. But this is not the scene which the flatfish reproduces on its skin. It depicts, with its chromatophores, the color, shape, size, and pattern of the material on the sea-bottom *as this material would appear to an eye whose line of direct vision*

was perpendicular to the plane of the sea-bottom and at a great enough distance from the sea-bottom so that the units of the pattern could be seen without any appreciable perspective distortion. Roughly speaking, the skin pattern closely resembles that of the sea-bottom as the latter would appear to you if you were looking directly down at it, and six inches or more away from it.

However this queer deed is accomplished, it certainly results in a translation of one perspective into another perspective; and *this translation is precisely that which is deducible from Euclidean space*. The rate of reduction of relative sizes in the first perspective is a function (mathematical) of the distance between eye and plane; and this very same relation governs the chemisms in the chromatophores and also the rearranging of the latter.⁴ Inasmuch as this translation is accomplished without the fish's seeing what it is doing to its own skin, we must at least conclude that somehow the perspective relations are so thoroughly "in" the space which the fish sees around it that they can *cause* other perspective relations just as truly as one chemical relation causes another. And just as one chemical relation causes another, without the assistance of any psychical act, so too with perspective relations: they are not set up by the "association of ideas," nor by an "*a priori* synthesis." They are physical, no less than weight is, and absolutely non-mental in the sense that they are not *constituted* by any psychical process.

The full interpretation of this particular matter can not here be given, for I must dwell upon the other significant discovery, namely, that the flatfish adapts its skin pattern only to the sea-bottom, in normal life, and only to a somewhat larger fraction of its own visual field, under the abnormal test conditions of Sumner's laboratory tanks. The animal notices objects above the bottom and even directly overhead; it follows such with its eyes and moves toward or away from them. *But the very same pattern which sets up the pigment reactions when it is underneath the fish has absolutely no effect when above it.*

A plate of opaque white glass, of the same size as the bottom of the tank, was covered with small, irregular blotches of black paint. . . . The three specimens used in this experiment had all been unmistakably influenced by this spotted plate when this was placed *beneath* them, assuming a much blotched appearance.

⁴Sumner has found that the plane in which a given surface lies with relation to the flatfish sometimes determines whether or not it shall be effective in calling forth a given change. It is not certain, he adds, that this influence is decided by "purely quantitative relations within the visual field." Should later experiments fully confirm the non-quantitative character of it, I think we should have to admit what I advanced in one of my previous papers on "Paradoxes of Visual Space"; namely, that *directions* are precisely as objective as extensity is.

. . . Upon the removal of the plate from beneath them, they had returned to a nearly unspotted condition. The spotted plate . . . was next inserted above the fishes (under the surface of the water, of course). The plate . . . was brightly lighted by the mirror below. That the fishes could see this spotted surface can not be doubted. Nevertheless, *not one of the specimens showed any appreciable influence, even after several days.*⁶ Return of the spotted plate to the bottom of the tank, beneath the fishes, resulted in each case in a resumption of the blotched condition within a few hours at most.

Is there any other inference than that the perceiving function is not constructive or transformative, but merely selective? Certain *important* elements in the environment are attended to, to the exclusion of others, when and only when it is a question of adopting the skin pattern. The other elements are seen, but they are ignored for this particular reaction. Unquestionably, the flatfish has a genuine "field of attention" wholly distinct from the visual field. But the items entering into the field of attention are *not* transformed therein; for they all pass over unchanged into the skin of the fish. I see no escape from the conclusion that the primary function of the psychic is to select, reject, and direct certain environmental characters with reference to certain *other* functions (such as nutrition, protection, locomotion, etc.). It seems equally sure that selection and reaction to the selected character does not necessarily alter the latter. In other words, adaptation of agent to environment does not have to involve a qualitative change in more than one of the two *relata*. And, in the special case of selective attention, this operation does not modify the essential characters of the stimuli selected for response.

In closing, I should like to suggest that the remarkable facts Sumner has brought to light may not raise the difficulties which their discoverer fears. I do not find it difficult "to conceive of a nervous mechanism competent to bring about such changes." Is it not quite probable that we have to do here with *an exceedingly simple*, rather than a mysteriously complex, structure and function? Instead of being an elaborate photochemical process which begins in the retina and undergoes a large number of incomprehensible transformations on the tract to the pigment cells, may the patterning not be effected by the direct conduction of untransformed ether waves to the chromatophores? To-day this hypothesis is not so extravagant as it was before Sherrington and others demonstrated experimentally that the periodicity of nervous impulses corresponds to the periodicity of serially repeated stimuli, at least up to rates of 500 per second. If we suppose that this correspondence holds for *all* cases, even those of ether wave shocks, we then have a nerve impulse

⁶ Italics mine.

at the pigment cells which is, in pattern (if not in kind), identical with the stimulus pattern.

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VICARIOUS FUNCTIONING OF IRRELEVANT IMAGERY

OBSERVERS have frequently reported the inability to detect imagery of any kind whatever in the feeling of relation or in the consciousness of intention or purpose. On the basis of these introspections Woodworth¹ has suggested the possibility of special non-sensory centers in the association areas, which underlie the feeling of relation. Whether this cortical basis be conceived as the activity of a special organ or as a more or less definite neural set, the consciousness which goes with it is described as a "naked thought," an imageless consciousness. Such a description has been accepted by several other observers.

It is possible that the failure to detect sensory elements in these moments is due to the fact that the observer is looking for *relevant* material, usually of an imagery sort, which would, if discovered, relate more or less directly to the end processes between which the relation is objectively or socially felt to exist. Irrelevant imagery easily escapes report, as do present perseverative or sensory impressions which might easily enough be carrying the thought forward.

The writer's own introspection, in attempts to test the matter, has usually resulted in the observation of thoughts which seem to stand midway between the conventionally costumed idea and the nude relational processes which flowed through the consciousness of Woodworth's observers—thoughts, that is, which possess no decent apparel of their own, but which nevertheless make effective headway in foreign garments appropriated or borrowed to suit the occasion. Images and perseverative impressions, even immediate sensory processes from quite irrelevant sources, may often be seen to function vicariously as the end processes of a relation which is focal.

The writer's observations cover three clear degrees or stages of this vicarious activity. The first includes dream states in which images quite irrelevant as to source or quality may be seen to play a symbolic or metaphorical rôle in the play of meanings, relations, and complications of situation which make up the plot of the dream.

¹"The Consciousness of Relation," in "Essays in Honor of William James," 1908, p. 491; and "The Cause of a Voluntary Movement," in the "Garmen Memorial Volume," 1906, p. 351.

The third stage is shown in the common observations that the vehicle of a waking meaning, the two poles of a relation, may be fragmentary, transitory, and only remotely relevant, relevant only by virtue of accidental association. The second stage is an intermediate one disclosed by observations of drowsiness hallucinations—a stage in which the thought process is a sensible and adequate waking affair, although the sensory content of consciousness may be evident dream material or even actual sensory impression of a quite foreign character. Illustrations of each of these will be given in turn, followed by a tentative suggestion as to their meaning.

1. A typical example of the first stage may be found in *Blackwood's* December number. The author of the article entitled "My Subliminal Self" describes drowsy and dream experiences illustrating clearly the process which the present writer has elsewhere called "substitution."² Take this description of a dream in which playing-cards were the principal actors:

Sometimes I am identified with a certain card or suit. I am not exactly the card but am next door to it. . . . Either the cards are there and mean something else, or else they are not there and I am thinking of people in terms of cards, with the same values and precedence. Or the cards may mean two things at the same time. Then I dream in metaphor, so to speak. And I am half-conscious all the while of the confusion of ideas—issues which correspond with the fall of the cards.

. . . When I have held good cards or when they have fallen well for me, I do not as a rule dream much. But when I have held yarboroughs and been doubled and roughed all the evening, and foiled in every finesse, I live through new defeats in my sleep. And every turn of the game registers similarly graduated misfortune in some corresponding venture. . . . Here is an instance. I was waked up suddenly one morning and wrote down what I could remember of a bizarre encounter which I had witnessed. The thing seemed to have been going on all night. This time I was detached at first and watched the fortunes of two long sequences in Clubs and Diamonds of five or six cards to the ten and knave in each. Sometimes they were merely unpromising cards, about which I had a vague idea that they would assert themselves by some latent virtue or unforeseen chance. Then I thought of them as people belonging to a middle-class family without much backing but destined somehow to emerge. . . . Sometimes they were cards, sometimes people. I must have been on the borderland of waking, and as the supraliminal consciousness took over charge they were cards, but as I sank back into the subliminal they were people. In one phase of the dream I saw them in an office . . . and they were directing the affairs of the nation. . . . I remember seeing one card or personified card value which stood between Ten and Office jump on a train and stand on the footboard as it was leaving a station, and I saw him swept off by the girders of an iron bridge. . . . In these dreams a card retains its personality from the time it starts individual life until the spectator is lifted up on a supraliminal wave to the literal facts of the game. . . .

²"The Psychology of Drowsiness," *American Journal of Psychology*, January, 1911, Vol. XXII., pp. 99-111.

With me such substitution dreams are frequent. The essential point in this stage is that thought processes, interplay of relations, comparisons, and intentions may go on in terms of sensory contents which could never sustain the same relations in waking experience. Relational activity is uncontrolled and the sensory content is irrelevant—hence the conclusion is likely to be absurd.

The third stage, in which a more or less trivial and accidentally associated image or fragment acts as the vehicle of a dignified and important meaning, is a common experience. Thus in Professor Titchener's consciousness the "feeling of 'but'" is represented by "a flashing picture of a bald crown, with a fringe of hair below, and a massive black shoulder, the whole passing swiftly down the visual field from northwest to southeast." Students habitually report that the only sensory component of their idea of "justice," the meaning of which is purely relational in character, is the image of some fragment of statuary, drapery, balance, carpenter's square, etc. The essential thing about this stage is that while the thought is sane and adequate, its clothing need not be a piece of photographic imagery. It may possess no intrinsic relevance whatever and yet suffice to carry thought forward, to bear up the relation, to possess meaning, and so on. And this sort of thinking, in which relations are controlled by preliminary purpose or set, and in which the imagery need be relevant only in an extrinsic way, results in safe conclusions.

The second or intermediate stage is a curious one in which, although the relations are controlled or determined by some waking set or task or intention, the sensory contents which introspectively sustain these relations may be drawn from any field whatever—may not be even associately relevant, and yet the conclusion is sane and is later transferred entire to the situation and objects which originally determined the relational set. Two cases will be given, taken from a study of the drowsiness consciousness already reported.

(a) Observer played checkers nearly all day on ocean liner. "Retiring to the cabin before sleeping-time, I threw myself drowsily on my berth and fell to ruminating over some projected experiments on the comic, wondering whether to follow the order of merit method or a method of assigning numerical grade to each comic situation. I decide, but in my half-awake consciousness both the deliberation and the decision take the form of moves of checkers on the board. I decide to move my white man up to the king row and mentally watch C—jump it with his black." The flow of imagery here was quite irrelevant, but the conclusion was valid and was transferred without modification to the situation which set up the thought process.

(b) "On board steamship, dressing for dinner in suit purchased abroad. Sitting drowsily on edge of berth and thinking that the suit had turned out to be a bad investment and had been forced upon me by a tricky salesman. Planning to buy cloth abroad this time to be made up in U. S., and wondering if it would pass customs. Thought over the conversation with the salesman and suddenly noticed that the rush of water, heard through the porthole, had become transformed into the voice of the salesman, trying to sell me the suit. Fall to musing in the process, wondering, while he talks, at his husky voice and why he has no more inflection."

In both these instances perfectly rational, sensible thought process was in progress, relations were felt and examined, and judgments passed. But the meanings were represented or sustained by utterly irrelevant sensory contents, which were in neither case simple images. In the first instance it was perseverative impressions of the men on the checker board, in the second the immediate auditory sensations that constituted the substantive points between which transitions were made and relations felt to exist.

These three chief stages seem to be only degrees of a common process, the principal characteristics of which are as follows:

1. There is a forward movement of relational consciousness—comparisons are made, positions, attitudes, bearings, consequences—in fact all manner of relations are handled, relations which exist between the genuine objects of experience.

2. These objects are not relevantly represented by imagery contents. At least in so far as the perception of relation goes they are not represented as the poles. They may, however, have been present at the very beginning to initiate the process and give it a determining direction.

3. Their place is taken by any content, revived, perseverative, or immediately sensory in character, which happens to be easily available at the time. These processes, by a sort of substitutional rôle, come to represent and impersonate the objects between which the relations, as socially recognized, would be said to hold. They carry out the thought, become the vehicle of influences, forces, and significances which they do not intrinsically possess.

4. Conclusions reached in terms of these vicariously functioning processes are transferred directly to the actual objects or experiences which originally set up the thought process and which may have been in consciousness in some sensory or revived form when the forward movement began.

5. A fair conclusion would be that the feelings of relation, depending, as they perhaps do, on centers associational in their func-

tion, are not quite naked processes—that association centers can function only in an active associational way, between two end processes, but that the precise character of these end processes and the cortical location of their corresponding areas is immaterial so long as the goal of the process, its tendency or direction, has once been set.

Just as in logic a relation presupposes substantives which are related, so in psychology the consciousness of relation implies the presence of sense content of some kind or other. Association areas, the activity of which may underlie the feeling of relation, do not initiate their own activity. Just as a relation involves related things, so association tracts function only as connecting lines between sensory or sensory and motor centers. The curious thing, however, is that any pair of sensory centers will suffice, no matter how irrelevant or derived they may be. The feeling of relation, or the relation itself, may well be the focal fact. This irrelevance of the sensory contents of the relational consciousness is what gives them their elusive character in introspection. The sensory material serves merely as the vehicle, the instrument of the process, and any vehicle will do. And the work of any one content may be taken up at any time by any other process which is available, yet the general forward movement be continuous. In the experience of the writer, present kinesthetic impressions or motor tendencies logically irrelevant are most frequently the vehicle or garment which plays the substantive rôle in relational consciousness.

Revived processes of almost any sort whatever, or even present incoming impressions, may vicariously function as standard-bearers for any intellectual exploration that may be in progress at the time. Thought may then never be really imageless, nor will it necessarily move in terms of a rigid photographic sensationalism. Thought must have garments, it is true, but it need not rely on its own providence. It is amply served by the charity of the passing moment,—by the vicarious functioning of irrelevant sense content. The validity of such thoughts seems to depend solely on the appropriateness of the association centers involved in the original set or disposition.

Such a conception is clearly incompatible with a schematic description of the functions of the cortical centers. The idea of a mapped out arrangement of sensory and motor centers with just as rigidly defined interconnections will not adequately represent the real functioning of the cortex. Such evidence as that just given argues for a much looser notion of free interplay of connection and pattern.

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REVIEWS AND ABSTRACTS OF LITERATURE

Die logischen Grundlagen der exakten Wissenschaften. PAUL NATORP.
Leipzig: B. G. Teubner. 1910. Pp. xx + 416.

In the relation between philosophy and science periods of intimate *rapprochements* seem to alternate with periods of mutual distrust. Professor Natorp suggests that the true interrelations between the two are lost sight of in periods in which each is developing along established lines, but come to light in those critical periods in which either is compelled to strike out into new lines. At any rate, it is well to note that the traditional distrust of metaphysics on the part of scientists has recently been rapidly disappearing. The radical reconstruction of physical theory necessitated by recent research has driven physicists into philosophy almost in spite of themselves. As a token of this trend of the times, the firm of Teubner is now publishing a series of books under the heading "Science and Hypothesis," the contributors to which are such distinguished scientists as Poincaré, Planck, Enriques, and Picard.

It is a pleasure to welcome, in behalf of American readers, this excellent series, well printed, moderately priced, and gotten up in the handy form for which Teubner is justly famous.

The volume before us is the twelfth in the series, and represents the effort of a certain school of philosophy to reinterpret the meaning of mathematics and mechanics. The orthodox neo-Kantian movement, of which Herman Cohen is the Nestor, has always interpreted the Kantian metaphysics as the logical foundation of Newton's "Principia"; and of late the Marburg School, of which Cohen and Natorp are the leaders, and E. Cassirer in some respects a most brilliant ally, has been especially active in tracing in detail the logical structure of the mathematical and physical sciences. Professor Natorp has for the past twelve years been publishing a series of papers and booklets on the philosophy of mathematics, and the work before us is the definitive form of this neo-Kantian philosophy of the exact sciences. In consonance with its aim to be a modern "Critique of Pure Reason," the book seeks to be constructive throughout and *streng wissenschaftlich* in the classic sense. Still, the author does not disdain, in passing, to show us the frailties of the neo-Leibnitzians who have recently been hammering at the Kantian philosophy of mathematics in the most merciless manner. We may, therefore, also regard the book as the neo-Kantian counterblast to Russell's "Principles of Mathematics" or to Couturat's version of it.

Chapter I. is devoted to the consideration of "The Problem of a Logic of the Exact Sciences." As Professor Natorp views it, the situation resembles very much the one that confronted Kant. On one side are the empiricists, represented by Kronecker and Helmholtz, and on the other hand the neo-Leibnitzian school of Frege, Russell, etc., who would reduce mathematics to pure logic. Professor Natorp, like Kant, rejects both of these positions, holding fast both to the *a priori* and the synthetic char-

acter of mathematical knowledge. He does not, however, follow Kant in attributing the peculiar certainty of mathematics to an *a priori* intuition. Instead he bases it on the synthetic process of thought. This, of course, will appear to many as an abandonment of the distinctively Kantian attitude, and as opening the floodgates of Hegelian panlogism which was so foreign to Kant. Professor Natorp, however, while a professed and thoroughgoing idealist, is tenacious in his adherence to the transcendental method and to the distinction between analytic and synthetic thought.

Dismissing the empiricists as not even worthy of the courtesy of a refutation, our author introduces his own point of view through a criticism of the analytic or "formalist" school. The error of this view is traced to the "dogmatic" Aristotelian logic which proposes to define everything until we come to the indefinable and prove everything until we get to the undemonstrable. This in turn is based on the fundamental error of naïve realism which regards things as given in perception, and conceives the work of thought to consist in the analytic working over of the content of perception. In opposition Professor Natorp holds to the Kantian dictum: No analysis without previous synthesis. As we can not observe this synthesis in action, it is attributed to a "primitive understanding" (p. 9). About the metaphysic of this primitive understanding, where, when, and what it is, *e. g.*, whether it is an individual or universal mind, etc., no revelations are made to us. The only thing the author is willing to tell us is that it is not in time, and is beyond the ken of the psychologist (*cf.* p. 99). The uncertainty in which we are left as to the whereabouts of this primitive synthesis, prevents us from understanding Professor Natorp's attitude to ordinary logic. On one hand he tells us that ordinary logic is analytic and can not extend our knowledge. Like the microscope, it can widen the angle between the rays, but can not increase their number. On the other hand, he admits that Frege, Couturat, and even Wolff and the older Leibnitzians mean by analysis something which does extend our knowledge. Indeed he is forced to use his own example of the microscope and admit that that instrument can materially add to our knowledge.

The effort to find a starting-point for his logic gives our author—not to mention the reader—considerable trouble. The transcendental method consists in following presuppositions. But there are no presuppositions unless something is given. What *is* given? It can not be the object of perception, for that is precisely the thing which it is the aim of knowledge to determine. After a long discussion, in which a great deal of emphasis is laid on infinite process, *genetisch* as opposed to *ontisch*, the *fieri* as opposed to the *factum*, we reach the conclusion that the problem of logic (*i. e.*, the transcendental variety) is to find those presuppositions which are necessary to bring the *x*—the undetermined, but to-be-determined, object of experience—into complete determination. This complete determination, we are assured almost *ad infinitum*, can be reached only by an infinite process.

In the second chapter we have a modernized deduction of the categories.

The dry bones of the Kantian framework receive a great deal of flesh and blood. In the end, however, they turn out to be our old friends the Twelve, marching in four groups of three each. If it were not for the fact that students at our colleges *do not* read German, this chapter could profitably be recommended to those who are reading Kant for the first time and who generally can not grasp what these categories are about.

In the third chapter we have a deduction of the number concept and of the four rules of arithmetic. The first condition, we are told, for the understanding of number is not to have anything to do with given things, for the latter already presuppose number. We must deal with rules of thought. Thought consists in nothing but positing relations, and the terms between which the relations hold are subsequent to the positing activity. Thus there is built up a fundamental series from which the number series is deduced. The issue of priority between ordinal and cardinal numbers is settled by calling them correlative. The mooted question as to whether the idea of number is dependent on time and space is answered mainly in the negative. Professor Natorp, however, thinks he saves something of the Kantian position by insisting that the relation of *before and after* is the common basis of number as well as of time and space. In his analysis of the operations of arithmetic he follows Simon, without, however, fully subscribing to the latter's stark subjectivism. Natorp admits that it is not enough to call numbers mental objects. We must show how they help us to cognize objects.

The critical work in this chapter is, whatever one may think of the constructive part, decidedly unsatisfactory. There is no attempt to come to close quarters with Russell's or Whitehead's definitions of numbers or their operations. Frege is taken as typical of the whole school, and arguments are used against him which Russell specifically answers. Many readers, however, who can not grow enthusiastic about the application of transcendental logic in this field, will agree with Professor Natorp in his insistence that not only are the so-called real numbers (*i. e.*, surds) and fractions to be looked on as operations, but even the series of positive integers must be so considered.

Chapter IV. is devoted to "Continuity and Infinity" and Chapter V. to "Direction and Dimension" as terminations of pure number. The modern account of infinity and continuity is accepted, but Professor Natorp remains loyal to Herman Cohen and insists on the notion of the infinitesimal. By means of this he builds up the idea of the *reality of something* which forms a transition from mathematics to mechanics. The specific criticisms of Russell against Cohen's use of the infinitesimal method are not directly answered. Indeed, so far as the Marburg school is concerned, the great work of Weierstrass might as well never have been accomplished.

Chapter VI. is entitled: "Time and Space as Mathematical Structures (*Gebilde*).\" In the discussion of time and space the author adheres, in the main, to the Kantian view. He would, however, change the Kantian order somewhat, and make time and space refer back to the categories of modality, relation, etc. The main point seems to be the insistence that

time and space are more than number in so far as they give existential reference to that which otherwise would be purely mathematical.

In the discussion of geometry, Professor Natorp no longer contends, as he did a few years ago, that metric geometry can not be subordinated to projective geometry; and he also seems to weaken somewhat in his hopeless stand that non-Euclidean geometry contradicts the fundamental axioms of the continuity and homogeneity of space. Logically, he reluctantly admits, non-Euclidean geometry is possible. He rejects it, however, on the philosophical ground that a space of more than three dimensions or of non-Euclidean constitution would lead to endless indeterminateness, and make existential reference impossible. Why a three-dimensional Riemannian space, or even a four-dimensional mechanics as recently sketched by Minkowski, should be considered any more indeterminate than Euclidean space or Newtonian mechanics, the present reviewer can not understand. A friend, however, makes the perhaps irrelevant suggestion that no man over forty-five will ever admit the possibility of a system of geometry other than the one which he was taught when a boy.

The last chapter—perhaps the most interesting—is entitled: “The Temporo-spatial Order of Phenomena and the Mathematical Principles of Natural Science.” In the discussion of the question of absolute time and space, Mach’s arguments against Newton are easily turned around to fortify the Kantian position. Absolute time and space are not found in experience precisely because they are the very conditions which make experience possible. Mach’s argument that absolute time and space are not real things and, therefore, of no practical importance, is met by the observation that in the same way nothing in our experience is absolutely one, yet the laws of arithmetic based on abstract numbers are assuredly of some practical importance. Natorp’s criticism of Mach would have been more effective if the former were in a position to analyze the latter’s conception of existence (in the assertion that only relative motion *exists*); but Natorp’s own conception of existence is, like that of most philosophers, entirely vague. For the most part he holds existence to be equivalent to complete determination (*cf.* pp. 336, 338). As we are repeatedly told that the process of determination is infinite, it would seem that the *existence* of things is the one thing forever unattainable to us.

The remainder of the last chapter is devoted to an epistemologic deduction of the fundamental laws of mechanics. Newton’s laws of motion, and even the principle of the conservation of energy, are all shown to be necessary on the principles of transcendental logic. It is not likely, however, that Messrs. Abraham, Lewis, Bucherer, and the others will take those proofs so seriously as to discontinue their labors in the direction of a non-Newtonian mechanics which should meet the facts of physics more adequately than does the classic mechanics.

In the last two paragraphs of the book we have one of the first attempts to determine the philosophic value of the relativity theory of Einstein and Minkowski. There is, however, no attempt to discuss the point wherein this theory does most violence to traditional views, *viz.*, its conception of what constitutes simultaneity.

The book before us is German in more senses than one. It is thorough and packed with information and close reasoning. The author has spent considerable labor on the great mathematicians—though one suspects that the intercourse has been too Platonic, *i. e.*, chaste and unfruitful. Professor Natorp does not seem to know the English or Italian works on symbolic logic. He apparently has not read Russell's book on Leibnitz; indeed, he has not read Russell's "Principles of Mathematics" with great care, if we are to judge by his references to Russell's views on analytic and synthetic judgments. There is also no reference to such French works on the theory of science as those of Picard or Duhem. There are, indeed, a few references to the German translation of Poincaré's "Science and Hypothesis," but the fundamental thesis of that work is not dealt with. Indeed, from the point of view which looks upon the fundamental principles of mathematics as hypotheses justified only by the fact that they give us a coherent scientific system, a good deal of Natorp's work as to the foundation of these principles must appear as entirely uncalled for.

Two closely related methods are typified in this book, which are characteristic of classic Hegelian philosophy and which have caused the latter to fall into such sad repute. These are (1) the method of dealing with the implication of *concepts* (not to be confused with the implication of propositions), and (2) the covert appeal to the self-evident. These methods are due to the prevailing belief that the relation between any two ideas is a relatively simple affair, which does not, like the relation between natural objects, need elaborate investigation. It is one of the great services rendered by mathematics to have shown that the relation between ideas requires long and patient inquiry, in which we are to be especially on our guard against any appeal to the apparently obvious. In a question like the convergency of a series, that which most people would regard as obvious turns out after laborious investigation to be almost invariably wrong.

We must, however, agree with Professor Natorp that there is much less danger to-day of Hegelian intrusions into the special sciences than there is of ignoring the fundamental problems of philosophy and of substituting for them an easy mixture of propositions from biology or physics seasoned with logically loose and vague general reflections. Such seem to me Ostwald's "Naturphilosophie," and, in large measure, a good deal of the work of Avenarius and Bergson.

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VIème congrès international de psychologie: rapports et comptes rendus.

ED. CLAPARÈDE (Editor). Geneva: Kündig. 1910. Pp. 877.

It is impossible to attempt, in a short review, a summary of the substance of the various papers and discussions given at this congress, held in 1909, and reported in the foregoing large-paged, bulky volume. It may be of interest, however, to indicate the matters that the directing committee deemed at that time chiefly important for discussion, by listing the topics, with the number of pages in the report devoted to each. (1) "The

Subconscious" (pp. 69): papers by Dessoir, Janet and Prince, aiming chiefly at a definition of the term. (2) "Religious Psychology" (pp. 77): papers by Höffding and Leuba. (3) "Psychology of the 'Sentiments'" (pp. 44): a paper by Külpe on the definition and characteristics of feeling, the methods of investigation and results and theories, and one by Sollier on "Le sentiment Cénesthésique." (4) "Perception of Position" (pp. 20): paper by Bourdon on the position of the body and its various members in relation to the vertical. (5) "'Mediumistic' Phenomena" (pp. 16): a paper by Alrutz on experiments in "levitation." (6) "Distance Orientation" (pp. 18): paper by Thauziés—historical, critical, and experimental—on the distance orientation of the carrier pigeon. A theory involving a magnetic sense is supported. (7) "The Tropisms" (pp. 78): papers by J. Loeb, Jennings, and Bohn setting forth their views on the nature of tropisms. (8) "Classification of Backward Pupils" (pp. 84): papers by Decroly, Heller, Ferrari, and Persigout. (9) "Pedagogical Psychology" (methodology) (pp. 32): paper by Ioteyko.

The discussions on the papers showed much lack of unanimity, even as to definition and the admissible psychological presuppositions, especially concerning the first three topics and the "tropisms."

Following the report of these set topics, the discussion concerning uniformity in psychological terminology, color standardization and classification, and in mathematical treatment of results is given. The practical upshot of this was the appointment of an international committee on terminology and the passing of a resolution to the effect that any one coining a new psychological term should so construct it that it might be embodied alike in all languages, or with only unavoidable modifications to suit the genius of a particular tongue.

Then follow 232 pages of unclassified individual communications.

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JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. June, 1911. *Le tempérament nerveux* (pp. 561-582): J. TOULEMONDE.—The nervous adult, differing radically from the nervous child, is essentially characterized by the lack of self-confidence, a lack which gives rise to imaginary ills and numberless other consequences of autosuggestion. This defect may be removed by means of proper education. *L'évolution actuelle du socialisme française* (second article) (pp. 583-607): L. GARRIGUET.—Syndicalism, a new and vital form of revolutionary socialism, aims to free the laborer from all control of superiors and to substitute therefor the voluntary discipline of workers who form an association but not a hierarchy. Its goal is a method of production perfect from the laborer's point of view. *A propos de quelques imperfections de la connaissance humaine* (second article) (pp. 608-620): M. GOSSARD.—In the nature of things our concepts of essence and of first cause are of necessity incomplete and inadequate. *La loi naturelle*

(pp. 621-636): E. BRUNETEAU. — The immutable and universal natural law of morals consists essentially in that a man should live as a man, not as an animal or as a spirit. *Analyses et comptes rendus*. B. Russell, *Philosophical Essays*; F. C. S. Schiller, *Riddles of the Sphinx*; M. Neeser, *La religion hors des limites de la raison*: J. GARDAIR. L. Cuénot, *La genèse des espèces animales*: F. CHOVET. J. Segond, *Cournot et la psychologie vitaliste*: F. MEUTRÉ. A Tornezy, *La légende des philosophes*: T. DE VISAN. B. Telesio, *De rerum natura*. *Recension des revues et chronique*.

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NOTES AND NEWS

THE eleventh annual meeting of the American Philosophical Association will be held at Harvard University, Cambridge, December 27 and 29, under the presidency of Professor Woodbridge. The headquarters of the Association will be at the Harvard Union. The leading subject for discussion will be "The Relation of Consciousness and Object in Sense Perception." The committee on definitions has prepared definitions of terms pertaining to this subject to which participants in the debate will be expected to adhere. The discussion will be led by Professors Thilly, Lovejoy, Miller, and Montague. In addition to the main subject, the following topics will be discussed: (1) "The Nature of Cause and the Place of Conception in Metaphysics." (2) "What, precisely, are we to understand by the term Evolution?" (3) "The Nature of Logic. Does the study of the subject deal with thought processes, or with quite non-mental terms and relations?" (4) "Do persistent illusions presuppose consciousness? If so, what consequences follow?" An extended announcement of the meeting, embodying the report of the committee on definitions, may be had by applying to the secretary of the Association, Professor E. G. Spaulding, Princeton University, Princeton, N. J.

THE twentieth annual meeting of the American Psychological Association will be held in Washington on Wednesday, Thursday, and Friday, December 27, 28, and 29, under the presidency of Professor Seashore. Hotel headquarters will be at the Ebbitt House. A symposium on the demarkation of the distinct difference between "Instinct and Intelligence" will be opened by Dr. Marshall. Professor Herrick, Professor Yerkes, and Professor Judd have already completed the preparation of their contributions to this symposium. Papers on the experimental study of animal

behavior will be read before a joint session with Section F of the American Association for the Advancement of Science, and the society will unite with section L for one session devoted to reports on research in educational psychology. The committee on experiments useful in teaching psychology (class and home experiments) will have some definite results of their year's work to present to the Association. Plans are brewing for a program on psychology in its relations to medical education. The proposal meets with the hearty approval of such representative educators as Drs. Adolf Meyer, Donaldson, and Prince. An exhibit of apparatus is being arranged.—*Science*.

THE National Association for the Study and Education of Exceptional Children held its second annual conference on the problem of the exceptional child on Friday and Saturday, December first and second. The day sessions were held in the auditorium of the School of Pedagogy of New York University, Washington Square; and there was an evening session on Friday in the building of the Society for Ethical Culture, Central Park West, New York City. A number of educators, physicians, and social workers participated in the proceedings and read papers. The topics discussed were as follows: "Causes of Exceptional Development in Children," "Educational Needs of the Various Kinds of Exceptional Children," and "The Exceptional Child as a Social Problem."

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on November 27. An afternoon session was held at the psychological laboratory of Columbia University and an evening session at the American Museum of Natural History. Between these two sessions an informal dinner was held at the Faculty Club of Columbia University.

A COMMITTEE consisting of Professors Baumgartner, of Breslau, and Wittmann, of Eichstätt, has been formed to celebrate, on September 13, 1913, the sixtieth anniversary of M. Clément Baeumker, professor of philosophy in the University of Strasburg and editor of "*Beiträge zur Geschichte der Philosophie des Mittelalters*."—*Revue des sciences philosophiques et théologiques*.

DURING the past month Dr. Günther Jacoby, Privatdocent in the University of Greifswald, delivered three lectures in philosophy at Columbia University. The subjects of the several lectures were: "A German Pragmatist," "Pragmatism; Bergson, and Schopenhauer," and "Current Thought in Germany."

THE Columbia University Press will bring out shortly the series of eight lectures on "The Genius of the Common Law" delivered this autumn at Columbia University by Sir Frederick Pollock.

A MEETING of the National Academy of Sciences was held in New York City on November 21 and 22.

THE MACMILLAN COMPANY will bring out shortly "A Critical Exposition of Bergson's Philosophy," by J. M'Kellar Stewart.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

REPORT OF THE COMMITTEE ON DEFINITIONS OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

To the Members of the American Philosophical Association:

Your committee appointed to draw up a plan for the principal discussion at the next meeting of the Association herewith presents its report. The subject of the discussion was selected, from among a large number of topics suggested by members of the Association, by the Executive Committee. At the request of the latter committee the Committee on Discussion has not confined itself to preparing definitions of the terms likely to be used in the debate, but has attempted to formulate somewhat precisely the issues involved and to indicate what appears to it to be, at the present juncture in philosophical discussion, the most promising mode of approach to those issues. Such an extensive attempt at an organization of cooperative philosophical inquiry has not hitherto been made by this Association. Whatever prove to be the success or non-success of the enterprise in this first instance, the committee believes such organized and co-operative inquiry to have important possibilities for the future of philosophical study. It therefore ventures to express the hope that members will make a special effort to enter into the spirit of the undertaking, to review the recent literature of the subject, and, in their participation in the discussion, to conform for the time being to the general plan of procedure herein suggested. This report is subject to later revision or supplementation.

The general subject proposed is: "*The Relation of Consciousness and Object in Sense-Perception.*"

I. DEFINITIONS

By *object* in this discussion shall be meant any complex of physical qualities, whether perceived or unperceived and whether real or unreal.

With respect to reality two classes of objects are distinguishable, real and unreal.

By *real objects* is meant in this discussion such objects as are true parts of the material world.¹

By *unreal objects* is meant in this discussion such objects as are not true parts of the material world.

With respect to givenness two classes of objects are distinguishable, perceived and unperceived.

By *perceived object* is meant in this discussion an object given in some particular actual perception.

By *unperceived object* is meant in this discussion an object which in some particular actual perception is not given.

There are thus four logically distinguishable classes of objects: (1) Real and perceived objects. (2) Real but unperceived. (3) Unreal but perceived. (4) Unreal and unperceived.

By *consciousness* is meant in this discussion that (property, relation, or what-not) by virtue of which perceived objects are logically distinguishable, though not of necessity numerically separate, from unperceived objects.

II. POSTULATES

1. It is assumed by the committee that all members will agree in admitting (*a*) that there are individuated sequences or "streams" of perceptions (*i. e.*, those of different persons), and (*b*) that any definable object which is at certain times present in a given individuated sequence of perceptions may at other times be not present in this.

III. QUESTIONS FOR DISCUSSION

It is proposed by the committee that the discussion be devoted to the two following connected but discriminable questions:

1. What is the relation with respect to numerical identity or difference between the above defined classes of real and of perceived objects?

2. What, if it can be further defined, is the positive nature of the difference between the status of a given object at those moments when it figures in some particular individuated stream of perceptions, and its status at those moments when it does not figure in that same stream? In brief, what is the nature of consciousness, considered as a factor or aspect of any specific perceptual situation? and how is the answer to this question logically related to the first question?

¹ This definition has been drawn up in these terms in order to avoid excluding the view, held by certain English realists, that so-called hallucinatory objects are true parts of the material world.

IV. ANALYSIS OF THE FIRST QUESTION

With respect to the first problem the following five views seem at least abstractly possible. These can be presented after the manner of formal logic as follows:

A. That perceived objects are always real objects and real objects are always perceived.

B. That perceived objects are always real, but real objects are not always perceived.

C. That real objects are always perceived, but perceived objects are not always real. This means that the real object and the perceived object are, at the moment of perception, numerically one, and that the real object can not exist at other moments independently of any perception. (Epistemological Monism and Idealism.)²

D. That perceived objects and real objects are never the same, though the former may be representative of the latter. This means that the perceived object and the real object are at the moment of perception numerically two, and that the real object can exist at other moments independently of any perception. (Epistemological Dualism and Realism.)

E. That perceived objects are sometimes real and sometimes not real, and real objects are sometimes perceived and sometimes not perceived (which here signifies "not given in any actual perception"). This means that the real object and the perceived object are at the moment of perception numerically one, and that the real object may exist at other moments apart from any perception. (Epistemological Monism and Realism.)

The committee recognizes that it is in connection with these five views that the main controversy relating to the first question arises. But inasmuch as the first two of the five logically possible positions are alone in affirming the reality of all perceived objects, whether hallucinatory or not, and inasmuch as recent discussion has concerned itself with the status of real objects (in the special sense of non-hallucinatory objects), the committee deems it wise to restrict the discussion to the consideration of the last three of the five possible positions. To this end the committee presents the following more specific formulation of the question at issue.

In cases where a real (and non-hallucinatory) object is involved, what is the relation between the real and the perceived object with respect (a) to their numerical identity at the moment of perception, (b) with respect to the possibility of the existence of the real object at other moments apart from any perception?

² The term "idealism" is used throughout in its epistemological sense, i. e., to denote the theory of subjectivism opposed to realism. It should not be confused with ontological idealism, i. e., the theory opposed to materialism.

V. ANALYSIS OF THE SECOND QUESTION

With respect to the second question—that as to the nature of consciousness—there is a great diversity of opinion. The committee has attempted a compilation and concise formulation of some of the recent accounts of consciousness (in so far as consciousness is involved in perception). The results are presented here in the hope that they may serve as a basis for discussion and a point of departure. But it should be clearly understood that these formulations have in some instances not been submitted for ratification to the philosophers to whom they are ascribed, and that consequently the latter should not be held responsible for them. The formulas which follow, it should be understood, are not verbal definitions, but statements of what different writers regard as constituting “that by virtue of which a perceived object differs from an unperceived object.” It should be further understood that the several formulas are not in all cases reciprocally exclusive, and that in the opinion of some a complete characterization of consciousness (as a factor in the perceptual situation) might require the combination of several of these formulas. Numbers in parentheses refer to the corresponding titles in the appended bibliography.

1. Consciousness is the response made by one entity to another in a specific manner exhibited by the reflex nervous system—the response being one which does not directly modify the entities responded to otherwise than to endow them for the time being with this content status. Thus the nature of consciousness is such as to justify epistemological monism and realism. (27, 29.)

2. Consciousness is the virtual or potential presence of an object at a place or time in which it is not actually present. Many objects can be virtually present in one organism and one object can be virtually present in many organisms. The objects, whether real or unreal, that are thus virtually present, or perceived, depend in no way upon the perceiver or upon the mechanism of perception, though the selective action of the mechanism of perception does determine at each moment which objects, real or unreal, shall be perceived. Thus the nature of consciousness is such as to imply the truth of epistemological monism and realism. (22, 23, 24.)

3. Consciousness is the instrumental activity of an organism with respect to a problematic or potential object. Thus the nature of consciousness is such as to imply the artificiality of the first question, and accordingly of its several answers. (7, 8; *cf.* 5, 18, 32.)

4. Consciousness is a certain external relation between objects—that of “meaning.” For an object to be in consciousness means for it (the object) to imply some other object or objects. Thus the

nature of consciousness is such as to render admissible epistemological monism and realism. (38, 39; *cf.* 4, 5, 19.)

5. Consciousness is a certain external relation between-objects, namely, that relation which obtains between them in so far as they enter the context of a single personal biography. Thus the nature of consciousness is such as to render admissible epistemological monism and realism. (13; *cf.* 4, 19.)

6. Consciousness consists essentially of conations; these are not merely attributes of consciousness, but are what (and what alone) is directly experienced as consciousness. They are directed towards objects; but perceived objects are "in" consciousness only in the sense that they are attended to and pointed at by some individual conation-sequence. The objects themselves are never mental (*i. e.*, composed of, or mediated through, consciousness), but are purely physical. Thus consciousness at any moment of perception is a given element in the perceptual situation distinct from objects or content; but the objects are not represented in or modified by consciousness. Thus the nature of consciousness is such as to justify both epistemological monism and realism. (2, 3; *cf.* 34, 35, and 37, p. 164.)

7. In normal perception, consciousness is a perfectly "transparent mental process," *i. e.*, a process which relates to objects and involves them for the time being in a special context, but does not thereby either ground their existence or modify their character. In abnormal perception (dreams, hallucinations, illusions) consciousness is not a transparent mental process, but one in which the content as well as the activity is mental—the object therein having its presence and character wholly or partly determined by special modifications or abnormalities in the physiological mechanism of perception. Thus the nature of consciousness in normal perception is such as to render admissible both realism and epistemological monism. (37.)

8. Consciousness is a unique and not further analyzable relation of "togetherness" which obtains among all the objects given in the momentary, individuated, and limited field of any particular perception. (*Cf.* 17, 19, 20, 21.) From the exclusive and individual character of the field in which this relation at any given moment subsists, it follows that an object given in one field can not be numerically identical with any object not at that moment in that relation within the same field. Thus the nature of consciousness is such as to render inadmissible the combination of realism and epistemological monism. (9, 20, 21.)

9. Consciousness consists of those existences whose being is iden-

tical with their seeming; it is a being "which knows in what state it is and is always precisely such as it knows itself to be." (Fechner, "Ueber die Seelenfrage," p. 199.) But since the being and nature of real objects are always conceivably different from their seeming, the nature of consciousness is such as to render inadmissible the combination of realism and epistemological monism. (Cf. 20.)

10. Consciousness is that medium, or mode of subsistence of objects, which (among other attributes) makes hallucinations, dreams, and perceptual errors possible—*i. e.*, the medium in which can exist a spatial object not at the same time existent in the "real" space of normal percipients. This reveals a specific type of case in which the existence of an object "in consciousness" is not identical with any relation among "real" objects. Thus the nature of consciousness is such as to render inadmissible the combination of realism and epistemological monism. (15; cf. 34, pp. 231-6.)

11. Consciousness is that which exists in time but not in space. As given in consciousness, therefore, objects, though they may be represented as having spatial attributes, are not existent in space; and consequently they can not be numerically identical with any (supposed) objects existing in space. Thus the nature of consciousness is such as to render inadmissible the combination of realism and epistemological monism.

12. Consciousness is psychic existence as such, and does not necessarily involve awareness, which is only a special type of psychic existence. Thus the nature of consciousness is such as to imply epistemological monism and idealism. (16.)

13. Consciousness is a sensory manifold unified through its conjunction with some single coherent purpose or interest. This conscious unity of feeling, determined by reference to a unique interest, is the only example to which we can point when we desire to show how relatedness is possible, and how it is conceivable that what is many should at the same time be one. But objects are necessarily conceived as possessing relations. Thus the nature of consciousness is such as to necessitate the acceptance of epistemological monism and idealism. (36; cf. also Green, "Prolegomena to Ethics," §§ 27-50.)

Respectfully submitted:

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THE FOUNDATIONS OF PHILOSOPHY EXPLICIT PRIMITIVES

AMONG the keenest minds that are pursuing abstract thinking at the present day are those which are engaged in carrying back the historical beginnings of certain of the sciences—in general, crude, accidental, hit-or-miss—to the underlying principles on which they can be (not have been) founded. This work consists in the main in bringing to light and setting down in plain black and white *all* the principles that have hitherto been let in surreptitiously—without full consciousness of what it is that is being taken for granted. It is evident, when one stops to think of it, that every science, and thought itself, is subject to the following two limitations:

(a) Not everything can be defined.

(b) Not everything can be demonstrated.

To define everything or to prove everything would lead to an infinite regress—it would require an infinite number of antecedent terms, and an infinite number of antecedent premises, as well as an infinite intelligence for the work of putting them together; it could not be undertaken by any one short of an Absolute. Now everybody has always been aware of this as an abstract proposition—the trouble is that thinkers have not always drawn the simple corollaries that must be adhered to, so soon as a science has progressed sufficiently to be under the control of scientific method at all, if it is desired to keep it free from shocking ambiguities and question-beggings:

(c) Indefinable terms must be distinctly enumerated.

(d) Undemonstrable propositions must be explicitly assumed.

Nothing must be admitted, that is to say, in the way of terms (concepts) or propositions (statements, truths, items of knowledge) except upon rigid inspection and fully above board. The vaguenesses and confusions that must follow upon the neglect of this simple precaution are evident theoretically, and are patent, in most branches of learning, as matter of fact. They are most vicious, of course, in those cases where widely different views are taken regarding the actual content, in fundamental matters, of the science in question—that is, as to what of the early propositions incontinently admitted into it are really true and what are not true. In such cases, proofs which carry conviction to one party to the discussion are perceived to be illegitimate by the other.

I add a few remarks, which there is not time to develop farther here:

1. Besides the “primitives” here mentioned (I use the term to cover the undefined terms and the unproved principles together), and the deductions from them, a science will, in general, consist of the results of observation; these are of the nature of particular propositions (including individual propositions)—if they are made into universal propositions, their universality will probably be hypothetical. Thus we observe that lines equally distant in more than two places do not meet within the field of observation. If we affirm that they never meet, we make our science (to this extent) an hypothetico-deductive science.¹

2. There is often great latitude as to which of several primitives are to be admitted; *a* may be defined in terms of *b* (explicitly indefinable), or *b* may be defined in terms of *a* (explicitly indefinable).

¹ See Huntington and Ladd-Franklin, “Symbolic Logic,” in *Encyclopedia Americana*.

The choice would be a matter of taste or convenience with reference to the further development of the science.

3. In the case of a science which is not at the beginning of things, terms need not be defined which are taken over from some more fundamental science. Thus when political economy defines wealth as those objects of desire which, etc., it properly takes over the term "objects" from the philosophers and the term "desire" from the psychologists. But for mathematico-logic, philosophy, and psychology themselves, this procedure is, of course, not available.

4. With the aid of the term "primitives," the two rules given above may be expressed as one:

(e) Primitives must be admitted explicitly.

The sciences which have been developed most strictly in accordance with the mark of rigidity here insisted upon are, of course, physics, mathematics, and logic—physics of olden time, within its limitations, and mathematics and logic, as regards a real delving down into their basal concepts and assumptions, only within the last generation—in spite of the fact that the general exactness of reasoning which prevails in these sciences ought to have suggested this procedure from the beginning. Cases of the infringement of the principles are always too common; but it is seldom that they reach the stage of a "circle in definition" (as in the case of Clerk-Maxwell, who defines matter as that which may have energy communicated to it, and energy as that which passes from matter to matter), or that actual ignorance of the principle is exhibited—as in the delicious example to be found in a quotation made by Miss Calkins for another purpose.² Whetham, after pointing out correctly the lack of logic involved in explaining matter in terms of ether and ether in terms of matter ("a fairly closely packed conglomerate of minute grains in continual oscillation"), says: "An ultimate explanation of the simplest events remains, *apparently forever, unattainable*" (italics mine). That is to say, he is not quite certain that explanation may not antecede explanation without end—even without calling in the aid of an Infinite Intelligence!

It would seem that these simple elementary considerations might have suggested themselves spontaneously to all those who spend their lives in thinking, but certainly after the model has once been set by the mathematico-logicians, there ought to be no delay in following it on the part of all delvers into the beginnings of things, and especially the philosophers, and more especially still the disputants over realism and idealism. In this field it takes very careful skating indeed not to slip into the use of terms which, for an opposing dis-

² This JOURNAL, Vol. VIII., p. 456, 1911.

putant, assume the very contention at issue. The program for the next meeting of the American Philosophical Association, which is printed in this issue, adopts the plan, admirable in design, of paving the way for mutual understanding among the disputants by providing not only a summary of existing views in regard to the questions to be discussed, but also a set of definitions of terms to be used in the discussion. But, if I am not mistaken, the makers of the program must intend the resulting discussion to be carried on solely among the neo-realists themselves. To those who have not been convinced by the arguments of this active school of thinkers, who believe, with Professor Lovejoy,³ that they represent a return to the "primitive spiritism" of our early ancestors—it must seem that quite too many things are admitted, in the phraseology adopted, which the pure idealist would object to. The realists have done a splendid service in battling against some of the untenable, mystical tenets of some of the schools of idealism, as the necessary internality of relations, the existence of an absolute, and others, which are, however, not essential parts of the belief. The central feature of pure idealism is that *consciousness is everything*—that is, everything of the first, most absolute, *degree of reality*. We have a conviction, an utter awareness, of the discriminable constituents of consciousness that we never have (after we have once begun to philosophize) of all those inferences-by-analogy which give us, in spite of our experience of dreams, a passable belief in the actuality of *les autres*, of physical "objects," of nervous systems, etc. All these are "working hypotheses," which "hang together" perfectly—they lack nothing but the absolute convincingness of a conscious experience. Miss Calkins, who has given lately a brilliant and, I believe, unanswerable defense of idealism,⁴ considers that a hypothetical unknown; an extra-consciousness reality, is utterly negligible. I should rather consider that it is a perfectly valid hypothesis, got, it is true, by an extrapolation (to use the physicist's term) beyond its legitimate limits, of the induction that every event has some cause, but perfectly well authorized, so long as one does not assign to it a validity which it does not possess. It is at all events an hypothesis which can never be disproved. The pure idealist of this kind (I had better call him the Simple Idealist, to avoid confusion with other uses of the term) is therefore identical with the Hypothetical Realist, and, as it happens, he accepts fully the two marks which Professor Montague

³ "Reflections of a Temporalist on the New Realism," this JOURNAL, Vol. VIII., p. 598.

⁴ "The Idealist to the Realist," this JOURNAL, Vol. VIII., p. 449.

gives, inadvertently,⁵ as the characterization of realism—(1) it holds that things perceived *may* continue to exist after they are no longer perceived, and (2) it is opposed to the belief which *denies* that they *can* exist under such circumstances. At the same time, *while* one is a philosopher, and walking about upon the points of his philosophical needles, there ought to be “no need of this hypothesis.”

I maintain, but at present without argument, that the first tenet of a sound epistemology should be:

(f) Consciousness is, in any system of thought, the first great indefinable.

Reflex nervous systems, objects having physical properties, activities of organisms, are, for the idealist, the very things that he denies the existence of—and by *existence* he means simply “occurrence within a given field of thought.” The field of thought from which he excludes them is that of the ultimate real—the domain of a non-hypothetical consciousness.

I wish merely, upon this occasion, to insist upon the importance of the principle here brought up—that of “explicit primitives”—and not to argue farther my contention that it is fundamentally sinned against in the “Program of Six Realists” and in that of the coming meeting of the Association. The very postulate which it is assumed that all members will agree in admitting—that of the existence of “different persons”—is abhorrent, surely, to all but realists. The existence of other individuated sequences or streams of perception besides the one which is a constituent of my own consciousness is fully as much a pure assumption (hypothesis) as is the existence of an external world. After it has once been made, there is no occasion for balking at the existence (occurrence within the same universe) of any other occupants of an external world.⁶ It is, however, an immense advance in philosophical discussion to find definitions and postulates prepared beforehand, and in particular to find *postulate* used, as it should be, for admitted assertions of existence (particular propositions). For universal propositions, the term axiom should be used. The fundamental distinction between propositions which assert and those which deny existence is of such great importance that it should be indicated in the name. Thus there are no postulates in the purely hypothetico-deductive

⁵ “Program and First Platform of Six Realists,” this JOURNAL, Vol. VII., p. 396.

⁶ For further brief discussion of a doctrine of truth, judgment, indefinables, etc., in harmony with views here advocated, see *Verhandlungen des III. Internationalen Kongresses für Philosophie*, Heidelberg, 1908.

sciences. For a term to cover both of these concepts, "first principles" can be used.⁷

We shall then have the following table:

| | | | | |
|-------------------|---|--|---|--|
| <i>Primitives</i> | { | <i>Concepts</i> (terms) | { | <i>Axioms</i> (universal propositions, assertions of non-existence) |
| | | <i>First Principles</i> (propositions, truths, items of knowledge, assertions, statements) | | <i>Postulates</i> (particular propositions, assertions of existence) |

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NOTES ON THE PHILOSOPHY OF HENRI BERGSON

II. INDETERMINISM AND DYNAMISM

IN an earlier paper¹ I have discussed Bergson's "anti-intellectualism" and "immediatism." His indeterminism is, in the first place, a sequel to his anti-intellectualism. Since determinism is a device of the intellect, it is relative to the interest which moves the intellect, and can not therefore be imposed on life itself. Instead of being determined, the will is itself the author of the principle of determination; this principle is not its master but its creature. Thus, according to Schiller, "determinism is an indispensable postulate of science as such." As such it "has primarily a *moral* significance; it is an encouragement and not a revelation." And "it is quite easy to accept it as a methodological assumption without claiming for it any ontological validity." Whether we accept this postulate, or "the ethical postulate of freedom," is in the end "a matter of free choice," based on their relative serviceability.²

Such considerations as these support the indeterministic theory only provided two further assumptions are made. In the first place, it must be assumed that the agency which formulates and employs a certain category can not itself be subject to that category. This assumption plays a notable part in all philosophies which seek to distinguish and separate the subject of knowledge from all of its objects. It is argued that known object implies knowing subject; and that to make this subject itself object is to displace and falsify it. The *real* subject is that which in every case of knowledge functions as subject. The application to the question of determinism is obvious. It is argued that things are determined by virtue of being objectified; and that the objectifying activity itself thus escapes determination.

⁷ See Baldwin's Dictionary of Philosophy and Psychology, Art. "Proposition."

¹ This JOURNAL, Vol. VIII., No. 25, p. 673.

² "Studies in Humanism," pp. 395, 396, 397.

But there is no reason why the subject of knowledge should not *in turn* be object of knowledge; or why, indeed, it should not be object of knowledge (in relation to another subject) at the same time that it is subject of knowledge. It is necessary only to suppose that the same term may stand in two or more different relations without forfeiting its identity. And unless we are to discredit knowledge altogether, we must suppose that the real nature of anything is revealed when it is object of knowledge, and in proportion as that knowledge is reflective and critical. It follows that a subject which objectifies other things, and renders them determinate, may itself be treated likewise; and that only when so treated is its real nature revealed. The subject is then free from determination only in so far as at any given time it is merely knowing and *not known*. But freedom in this sense is only a mode of nescience.

The other assumption which is needed to complete the argument is the assumption that laws are artificial. In this application it means that determinism is a fabrication of the intellect, imposed on a plastic material whose real inwardness it distorts. Bergson's criticism of determinism is based mainly on these grounds.³ It constitutes one of the major applications of his most fundamental and original thesis, to the effect that the intellect spacializes time, and so necessarily falsifies every temporal process by expressing it as a "multiplicity of juxtaposition." Real time (*durée réelle*) is "heterogeneous" and "continuous," the real temporal process is a multiplicity of "interpenetration."⁴ Action, as a real temporal process, is spacialized and falsified by mechanism, by finalism, and even by the majority of indeterminists. By all such "intellectualists," action is represented as a discrete process, with its component elements and successive phases in external juxtaposition to one another. Time is represented as a linear series, and the conditions of action, the moment of choice, and the result of action are correlated with the terms of this series. But such a diagram is both discrete and static; whereas the real action *flows*, and *endures*. The intellectualistic representation necessarily excludes freedom, because it is the representation of a completed action, and not of an action *as it goes on*. It is impossible in this way to represent alternative possibilities, for the representation either contains both possibilities, and so is contrary to fact; or it contains one of them to the exclusion of the other. And the finalistic scheme is as rigid as the mechanical scheme. For whether we conceive the later terms of the series as the sequel to the earlier, or the earlier as the foreshadowing of the later,

³ Cf. "Time and Free Will," Ch. III., and "Creative Evolution," *passim*.

⁴ "Time and Free Will," pp. 121, 128, 129, and *passim*.

in either case all the terms are *there*, in place, simultaneously and exclusively.⁵

Bergson's objection to the intellectualist's version of time rests, as does his whole polemic against intellectualism, upon a mistaken conception of the logical or analytical method.⁶ The spacial representation of time is intended to be a representation of order, and to be a representation of time in so far, and only in so far, as time is orderly. The properties of order are the same whether in space, number, the color spectrum, the alphabet, or time. The series of points on a line furnishes a convenient case of order for purposes of demonstration; and it doubtless reflects the spacializing propensity of the human mind. But this habit has not prevented logicians from distinguishing the bare properties of order from those of space; otherwise there would be no difference between logic and geometry. It is as possible to discriminate and formulate logical properties by using a spacial representation, as it is to discriminate and formulate pure triangularity by using the representation of a particular triangle.

If Bergson were a better pragmatist, he would not assume, as he does, that ideas are mere reproductions of their objects. He would recognize the possibility of meaning non-spacial relations by spacial images. He would not insist as he does that we know number by "picturing" it, and that we can not escape the characteristics of the graphic imagination.⁷ He would not fall into the loose common-sense use of the term "conceive" as *depict*, and confuse the arrangement of the instrumental image with the arrangement which it enables us to know. As a matter of fact, it is possible to know logical properties in their non-numerical character, and numerical properties in their non-spacial character, even though it be necessary to employ images that are both numerical and spacial. For the *postulates* of logic differ from those of arithmetic, and these in turn from those of geometry. If it were not possible to employ spacial images for the knowing of non-spacial things, Bergson himself would be even more helpless than those whom he criticizes. For his own favorite expressions are essentially spacial. What images do the words "flux," "continuity," "interpenetration," "deep-seated," "interconnection," "organization," and "fusion," suggest, if not spacial images? And yet Bergson assumes that these images may so function as to afford knowledge of that which is essentially non-spacial. If a figure of speech can so function, is there any reason why a geometrical figure, or algebraic formula, should not? In short,

⁵ *Op. cit.*, pp. 172 sq.

⁶ See previous article, this JOURNAL, Vol. VIII., p. 673.

⁷ "Time and Free Will," p. 78.

Bergson arbitrarily imputes to his intellectualist adversary a naïve identification of object and symbol which he disclaims in his own behalf.

It is not a question, then, of imputing to time the arrangement characteristic of logical or mathematical *symbolism*, but of imputing to time certain *properties* which may be known by *means* of this symbolism. Is time an order, or is it not? Is duration an extensive magnitude, or is it not? Now the orderliness of time is implied in all that Bergson has to say about it, *e. g.*, in its continuity and in its duality of "sense" or direction. Its multiplicity, even though it be characterized as "qualitative" rather than "juxtapositional," is orderly, in that if any phase *a* be later or older than another phase *b*, and *b* than a third phase *c*, then *a* is later or older than *c*. And as to time's being an extensive magnitude, Bergson's argument would appear to consist in pointing out that *temporal processes* are not *merely* extensive magnitudes—which no one, I think, would be disposed to deny. Velocity, *e. g.*, is an intensive magnitude. But this does not in the least prevent its being a ratio of the extensive magnitude, *d* (distance) and *t* (lapse, or interval of time). It may even be admitted that every temporal process or change, every function of time, has intensive magnitude; and this in no way contradicts the conception of time itself as an extensive magnitude. In other words, an intensive magnitude may be a function of extensive magnitudes, and may be computable or predictable in terms thereof.

That such is the case is proved by the predictions which science is actually enabled to make. Bergson's critique of astronomical prediction turns upon the fact that the symbol *t* in the equation of astronomy "does not stand for a duration, but for a relation between two durations, for a certain number of units of time, in short, for a certain number of *simultaneities*."⁸ In other words, the *t* of science is measured by some standard change, such as the motion of the hands of a clock. So that if a "mischievous genius" were to decree that all the movements of the universe should go twice as fast, the predictions of science would not be affected. Now, granting this, it follows only that science can not predict absolutely but only relatively. This does not in the least detract from the precision of the prediction or from its reference to the future. And the very statement of the objection assumes that time is an extensive magnitude. For if the movements of the universe were to go "twice as fast," this would mean that equal distances would be covered in *one half the time*.

Subsequently Bergson has the temerity to speak of a decree that

⁸ *Op. cit.*, p. 193.

time itself "shall go ten times, a hundred times, a thousand times as fast."⁹ Apparently the rate of real time is to be measured by the immediate feeling of the "enduring" or aging of experience. If so, can the author explain, without making use of the conception of a pure extended time, what is meant by "a psychological duration of a few seconds";¹⁰ or how temporal magnitudes are commensurable, how, *e. g.*, two lives with different experiences may be regarded as synchronous; or how one day may be regarded as fuller and richer than another? The fact is that no quantitative judgments whatsoever can be made concerning temporal processes that do not employ the notion of a simple extended (not spacial) temporal magnitude. And the predictions of science are made in terms of this component of change. The *t* of the equations of mechanics means this component.

As we have seen, Bergson is constantly confusing the symbol with what it means. To one who falls into this confusion it may appear that an equation can not refer to time because the structure of the equation itself is not temporal; because the symbols are simultaneously present in the equation. But if *t* is one of the terms of the equation, and *t* means time, then the equation means a temporal process. Furthermore, an equation may define a relation, such as =, <, or >, between temporal quantities, in which case the full meaning of the equation is still temporal. For changes, events, or even pure intervals may stand in non-temporal relations such as those above, without in the least losing their temporality. The supposition that an equation defining a relation can mean no more than the relation defined, is disproved by every formula of science. The formula, $c^2 = a^2 + b^2 - 2ab \cos \gamma$, does not mean merely equality, but a relation of equality among the sides and an angle of a triangle. The formula means something about triangles, by virtue of the meaning of its component variables, and despite the fact that the relation defined is the non-spacial relation of numerical equality. And similarly, a formula in dynamics, such as $g = v/t$, means something about a temporal process.

There remains one further instance of Bergson's failure to represent with any correctness the position of his deterministic opponent. It is a question of Paul's ability to predict Peter's choice, provided he knows "all the conditions under which Peter acts."¹¹ Bergson argues that in order to know absolutely all of the conditions under which Peter acts, and to know all about these conditions (including

⁹ *Op. cit.*, pp. 193, 194 (italics mine).

¹⁰ *Ibid.* (italics mine).

¹¹ *Op. cit.*, pp. 189 ff.

what they lead to), Paul would have to *be* Peter up to and including the moment of his choice—so that instead of predicting the choice he would be himself making it. But determinism does not rest its case on the possibility of knowing all the conditions of an event. No such knowledge has ever been attained in any instance. Determinism rests its case upon the fact that it has sometimes proved possible to find *just those particular conditions* upon which the event depended. Prediction always abstracts, not only causes, but effects as well. It finds cases of specific, discriminated terms, antecedent and subsequent, that are connected by a law. Its prediction is based on the specific antecedent, and confined to the specific consequence. It asserts that whenever such and such conditions occur, whatever else may occur, such and such consequences will ensue, whatever else may ensue. And Bergson has offered no reason for supposing that such is not the case with human action as well as with other temporal sequences. As a matter of fact it is the case. Human action is predictable within limits; inasmuch as laws, such as those of physiology, psychology, and pathology, have been found and verified. So that Bergson's objection amounts to no more than the contention that human action is not in all respects predictable, which holds equally of every other concrete event.

Thus the indeterminism that is founded on the polemic against intellectualism can mean no more than that there is plurality, disjunction, irrelevance, and novelty in the world, as well as law. Such indetermination is enjoyed by life and moral action no more than by its natural environment. There is thus no ground for imputing to man any prerogative of freedom by which his nature is distinguished and exalted. Indeterminism in this positive and eulogistic sense depends entirely, then, on the further doctrine that man possesses a unique activity, a real causality of another order, through which he may be the original and spontaneous author of events.

Bergson's positive version of freedom follows from the postulate of "dynamism," as opposed to "mechanism." "Dynamism starts from the idea of voluntary activity, given by consciousness," and "has thus no difficulty in conceiving free force." From this point of view "the idea of spontaneity is indisputably simpler than that of inertia, since the second can be understood and defined only by means of the first, while the first is self-sufficient."¹² Similarly, Schiller says that the will is "the original and more definite archetype, of which causation is a derivative, vaguer and fainter ectype."¹³

Bergson has stated the issue clearly. It is essential to his view

¹² *Op. cit.*, pp. 140-142.

¹³ "Riddles of the Sphinx," third edition, p. 443. Cf. Appendix I., *passim*.

that the free creative activity of will should be regarded as a simple and self-sufficient experience. There is, it is true, a suggestion of another view. We are told that the free act is the act of which the "self alone" is the author; the act which expresses "the whole of the self," as distinguished from "reflex acts."¹⁴ But for Bergson the whole of the self is not the sum of its parts; so that it is impossible to construe its action as a more complicated or massive reflex. The "whole personality" is indivisible and unanalyzable; it appears only when conscious states dissolve into a higher unity, and its action can only be felt and not traced. This self-intuiting activity becomes the first principle of Bergson's metaphysics. It connects his theory of knowledge with his theory of will. True knowledge is "the faculty of seeing that which is immanent in the faculty of acting." And activity is the universal substance. "Strictly speaking, there are no things, there are only actions." Activity is no longer predicated merely of the organism as distinguished from the environment. As the former is "the action that is making itself," the latter is "*action which is unmaking itself.*" If life is a movement, "materiality is the inverse movement." And "God, thus defined, has nothing of the already made; he is unceasing life, action, freedom. Creation, so conceived, is not a mystery; we experience it in ourselves when we act freely."¹⁵ Thus the sequel to the postulate of "dynamism" is a metaphysical activism or creationism; and in so far as Bergson's philosophy assumes this form, it allies itself with the voluntaristic and romanticist forms of idealism.

The sole support of this metaphysics and philosophy of religion is the postulate of dynamism. If it be true that the essential nature of causality is revealed in the experience of activity, then it follows that physical causality is only a projection or inversion of will. Criticism, then, must challenge the postulate. And first of all it is to be pointed out that the *origin of the idea of causality* is an irrelevant consideration. The causation exercised by the will may have been the first to attract attention, and it may remain the most familiar instance; but it does not follow that causation was first *understood* in the case of the will, or that the will is the *clearest* instance of it. As the first and most familiar instance, it may be the most primitive and ill-comprehended. It may be the instance to which crude and uncritical modes of thought are, through the operation of habit, most firmly attached. This suggestion receives support from the fact that the experience of activity is held to reveal the operation of a simple, free, and spontaneous "force," *just in propor-*

¹⁴ "Time and Free Will," pp. 165, 166, 168.

¹⁵ "Creative Evolution," p. 250, 248, 247, 249-250, 248.

tion as it is not analyzed. "The self, infallible when it affirms its immediate experiences, feels itself free and says so; but as soon as it tries to explain its freedom to itself, it no longer perceives itself except by a kind of refraction through space."¹⁶

This is Bergson's way of acknowledging that the experience, whether for better or for worse, *can* be analyzed. Now it has already been pointed out that there is a very significant difference between the simplicity that precedes, and that which follows, analysis. The first is the simplicity of knowledge that has not yet fully explored and grasped its object; the second is the simplicity of the object. The knowledge of anything whatsoever is simple at the instant of its initiation; it begins at zero, or spreads from a point which is the bare denoting of its object. To attribute this accidental and subjective simplicity to the object is to fall into the error which I have called the error of "pseudo-simplicity."¹⁷ "Dynamism" depends upon this error. It unites the multiplicity of activity as a process, the multiplicity which it reveals upon even the most cursory examination, with that phase of knowledge in which analysis has not yet begun. The as-yet-simple knowledge of a complex thing is converted into a thing which possesses a complex simplicity or simple complexity.

This is not the same as to say that activity is indefinable. It is not shown to be simple in the sense of having been tested and found unanalyzable. It is not an ultimate term. As a matter of fact, activity has proved definable, both psychologically and physically. Pragmatists like James have gone far toward defining subjective activity;¹⁸ and rational dynamics contains exact formulations of activity in the physical sense. No, one must not *attempt* to define it; it is essentially a something-not-yet-defined. In short, it is nescience presented in the rôle of a revelation of reality. To lapse from knowledge into nescience is always possible—there is no law of God or man forbidding it. But to offer nescience as evidence of the nature of anything, to rank nescience above knowledge for *cognitive* purposes, is to obtain immunity from criticism only by forfeiting the right to a respectful hearing.

Pragmatism offers two versions of indeterminism. On the one hand, it is argued, on pluralistic grounds, that necessity is not all-pervading. There are dislocations in the universe that make it possible to judge parts of it—such as its good, its evil, and its indifference—independently. It is possible to attack evil in behalf of good, without the sense that one's client is guilty of complicity. The world

¹⁶ "Time and Free Will," p. 183.

¹⁷ Cf. the earlier article, this JOURNAL, Vol. VIII., p. 673.

¹⁸ Cf. James, "The Experience of Activity," in "A Pluralistic Universe," Appendix B.

is not a conspiracy; the game is not "fixed"; the world in the all-inclusive sense is a contact of strange things, a shock of independent forces, and the game of life is honest warfare.

On the other hand, it is argued by Bergson and other pragmatists of the radical wing that there is in man an indeterminate, incalculable, and creative power to do. But the proof of it requires the abandonment of every tried method of knowledge—both the logical method of "intellectualists" and the observational, experimental method which pragmatists themselves have so successfully practised on every occasion but this. Radicalism of this type is not only unreasonable and unverifiable, but it destroys the originality and distinction of pragmatism and allies it with forces of romanticism, mysticism, and irrationalism.

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NOTES AND NEWS

DR. EDMUND B. HUEY, who has for some time been making examinations of defective children and of aphasic patients at the Johns Hopkins Hospital, has been appointed lecturer on mental development in the Johns Hopkins University and assistant in psychiatry in the Phipps Clinic of the Johns Hopkins Hospital. From January to June, 1912, Dr. Huey will give, at the university, a series of weekly public lectures and clinics on the subject of backward and feeble-minded children, and on related phases of clinical psychology.

THE administration of Radcliffe College has kindly consented to offer to women members of the American Philosophical Association the privilege of engaging room and board at Bertram Hall, from Tuesday evening, December 26, through Friday, December 29, at \$1.50 a day. Those who wish to avail themselves of this opportunity are asked to write, as soon as possible, to Dean Mary Coes, Radcliffe College, Cambridge, Mass., naming the intended time of arrival and the time of departure.

PROFESSOR FRANZ CUMONT is delivering a series of three lectures on "Astrology and Religion in Antiquity" at Columbia University. The lectures are as follows: December 19, "Origin and Dissemination of Astrology and Star Worship"; December 21, "Astral Theology and Astral Mysticism"; December 22, "The Astral Doctrine of the Future Life."

THE Société Française de Physique has arranged a series of nine lectures on "Modern Ideas on the Constitution of Matter," by Madame Curie, Professors Langevin, Perrin, Weiss, and other distinguished physicists. They are to be delivered on Saturday evenings during the next four months either at the Sorbonne or at the rooms of the society, and are open to all members of the society.—*Nature*.

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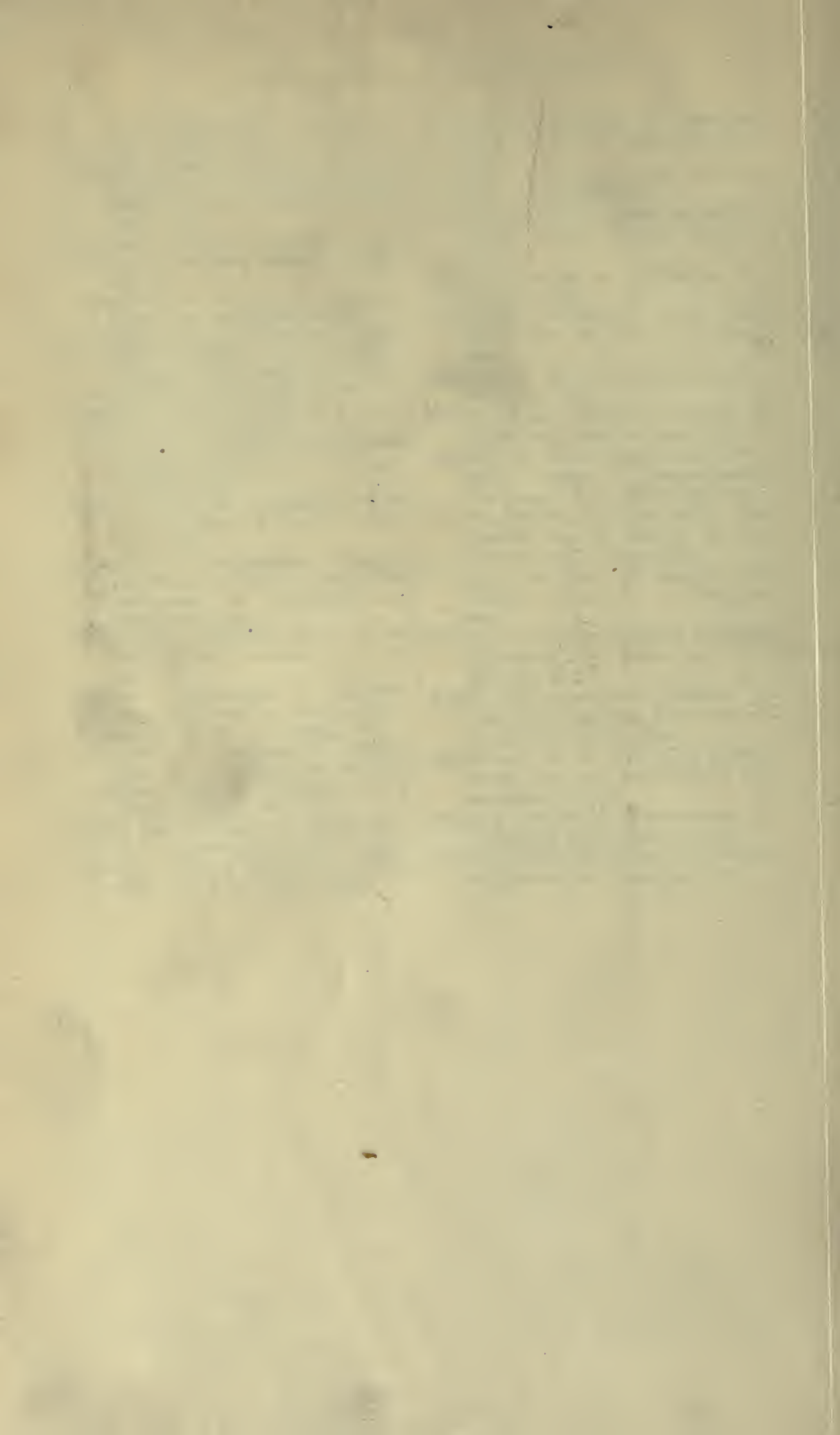
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